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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6

REGIONAL HEARING CLERK
EPA REGION VI

IN THE MATTER OF:

Star Lake Canal Superfund Site
Jefferson County, Texas

HUNTSMAN PETROCHEMICAL
CORPORATION,
CHEVRON ENVIRONMENTAL
MANAGEMENT COMPANY,

Respondents

) CERCLA Docket No. 06-02-06
)
) Administrative Settlement Agreement
) and Order on Consent for Remedial
) Investigation/Feasibility Study
)
) Proceeding under Sections 104, 107,
) and 122 of the
) Comprehensive Environmental Response,
) Compensation and Liability Act, 42
) U.S.C. §§ 9604, 9607, and 9622
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**ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR
REMEDIAL INVESTIGATION/FEASIBILITY STUDY**

I. INTRODUCTION

1. This Administrative Settlement Agreement and Order on Consent ("Settlement Agreement") is entered into voluntarily by the United States Environmental Protection Agency (EPA) and the following who are hereinafter referred to collectively as "Respondents": Huntsman Petrochemical Corporation ("Huntsman", formerly known as Huntsman Corporation), and Chevron Environmental Management Company ("CEMC"), for itself and on behalf of Texaco Incorporated. The Settlement Agreement requires that Respondents prepare and perform a remedial investigation and feasibility study ("RI/FS") for the Star Lake Canal Superfund Site in Jefferson County, Texas (the "Site"). Respondents must also reimburse EPA for Future Response Costs incurred in connection with the RI/FS, subject to the reservations of rights in Sections XXV and XXVI.

II. JURISDICTION

2. This Settlement Agreement is issued under the authority vested in the President of the United States by Sections 104, 107 and 122, of the Comprehensive Environmental Response,

Compensation, and Liability Act, as amended, 42 U.S.C. § 9604, 9407, and 9622 (CERCLA). This authority was delegated to the Administrator of EPA on January 23, 1987, by Executive Order 12580, 52 Fed. Reg. 2926 (1987); further delegated to Regional Administrators by EPA Delegation No. 14-2, Titled "Response", (November 8, 2001); and redelegated by the Regional Administrator to the Director, Superfund Division, by EPA Delegation No. R6-14-2 (March 21, 2002).

3. Respondents agree to undertake all actions required by the terms and conditions of this Settlement Agreement. EPA and Respondents recognize that this Settlement Agreement has been negotiated in good faith and that the actions undertaken by Respondents in accordance with this Settlement Agreement do not constitute an admission of any liability. In any action by EPA or the United States to enforce the terms of this Settlement Agreement and subject to the Dispute Resolution provisions of Section XX, Respondents consent to and agree not to contest the authority or jurisdiction of EPA to issue or enforce this Settlement Agreement, and agree not to contest the validity of this Settlement Agreement or its terms.

III. PARTIES BOUND

4. This Settlement Agreement applies to and is binding upon EPA and upon Respondents, their agents, successors, and assigns. Respondents are jointly and severally responsible for carrying out all actions required of them by this Settlement Agreement. The signatories to this Settlement Agreement certify that they are authorized to execute this Settlement Agreement and legally bind the parties they represent to this Settlement Agreement. No change in the ownership or corporate status of each Respondent, or the Site, including any transfer of assets, shall alter each Respondent's responsibilities under this Settlement Agreement.

5. During the period this AOC is in effect, each Respondent must provide a copy of this Settlement Agreement to any subsequent owner or successor before ownership rights or stock or assets in a corporate acquisition are transferred. Respondents must provide a copy of this Settlement Agreement to all contractors, subcontractors, laboratories, and consultants retained to conduct any Work performed under this Settlement Agreement, within 14 days after the effective date of this Settlement Agreement or the date of retaining their services, whichever is later. Respondents must condition all such contracts upon satisfactory compliance with this Settlement Agreement. Notwithstanding the terms of any contract, each Respondent is responsible for compliance with this Settlement Agreement and for ensuring that its subsidiaries, employees, contractors, consultants, subcontractors and agents comply with this Settlement Agreement.

IV. STATEMENT OF PURPOSE

6. In entering into this Settlement Agreement, the objectives of EPA and Respondents are: (a) to determine the nature and extent of contamination and any threat to the public health, welfare, or the environment caused by the release or threatened release of

hazardous substances, pollutants or contaminants at or from the Site, by conducting a remedial investigation; (b) to determine and evaluate alternatives for remedial action to prevent, mitigate or otherwise respond to or remedy any release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site or facility, by conducting a feasibility study; (c) to provide for EPA to recover Future Response Costs incurred by EPA not inconsistent with the NCP with respect to this Settlement Agreement; (d) to provide Respondents with contribution protection as defined in Section XXVII and with a covenant not to sue as provided in Section XXV; and (e) to avoid protracted and expensive litigation.

7. The activities conducted under this Settlement Agreement are subject to approval by EPA and shall provide all appropriate necessary information for the RI/FS, and for a record of decision that is consistent with CERCLA and the National Contingency Plan (NCP), 40 C.F.R. Part 300. The activities conducted under this Settlement Agreement shall be conducted in compliance with all applicable EPA guidances, policies, and procedures.

8. EPA and Respondents acknowledge that some or all of the Respondents may hold other Permits. Each Respondent remains responsible for compliance with all of its permits and with this Settlement Agreement.

V. DEFINITIONS

9. Unless otherwise expressly provided in this Settlement Agreement, terms used in this Settlement Agreement that are defined in CERCLA or in regulations promulgated under it will have the meaning assigned to them in CERCLA or the regulations. Whenever terms listed below are used in this Settlement Agreement, the following definitions apply:

"ARARs" means all applicable local, state, and Federal laws and regulations, and all "applicable requirements" or "relevant and appropriate requirements" as defined at 40 CFR § 300.5 and 42 U.S.C. § 9621(d).

"CERCLA" means the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601 to 9675.

"Contaminant" has the definition at 42 U.S.C. § 9601(33); as used in this Settlement Agreement "contaminant" includes hazardous substances and pollutants. Reference to "contamination" includes media where any hazardous substance, pollutant, or contaminant has come to be located.

"Day" means a calendar day unless expressly stated to be a business or Working day. In computing any period of time under this Settlement Agreement, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period runs until the end of the next day not a Saturday, Sunday, or Federal holiday.

"Deliverable" means any action, activity, task, or submission required to be done by the Respondents under this Settlement Agreement. A deliverable is Work.

"EPA" means the United States Environmental Protection Agency and its successor agencies.

"Future Response Costs" shall mean all costs not inconsistent with the NCP, including, but not limited to, direct costs, indirect costs, and accrued Interest (as defined herein) paid by the United States, subsequent to the effective date hereof, or the State at the direction of the EPA, in reviewing, developing plans, reports or other documents pursuant to this Settlement Agreement, verifying the Work, or otherwise overseeing, implementing or enforcing the Settlement Agreement, and activities performed by the government as part of the RI/FS and in development and implementation of a community relations plan and any revision thereto, time and travel costs of EPA personnel and associated indirect costs, contractor costs, costs pursuant to any State Cooperative Settlement Agreement, compliance monitoring, including the collection of and analysis of split samples, inspection of RI/FS activities, Site visits, discussions regarding disputes that arise under this Settlement Agreement, review and approval or disapproval of reports, costs of re-doing any of Respondents' tasks and costs of conducting activities pursuant to this Settlement Agreement on any portions of the Site to which Respondents were unable to gain Site access and any costs incurred to obtain access to properties as may be necessary to carry out activities required under this AOC.

"National Contingency Plan" or "NCP" means the National Oil and Hazardous Substances Pollution Contingency Plan promulgated under Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, including any amendments.

"Paragraph" means a portion of this Settlement Agreement identified by an Arabic numeral followed by a period. References to paragraphs in the Statement of Work (SOW) will also be so identified (for example, "SOW Paragraph 15").

"Performance Standards" means those cleanup standards, Work standards, standards of control, and other requirements, criteria, or limitations specified in the Settlement Agreement, including the SOW. Because EPA-approved submissions are an enforceable part of the Settlement Agreement, cleanup goals and other substantive requirements, criteria, or limitations specified in EPA-approved submissions are Performance Standards. EPA will use the Performance Standards to determine whether the Work required by the Settlement Agreement has been completed. Except where it is inconsistent with this Settlement Agreement, as determined by EPA, the RI/FS Guidance and the other EPA guidance cited in the Settlement Agreement are Performance Standards.

"Respondents" means the parties listed in Attachment A (List of Potentially Responsible

Parties) to this Settlement Agreement, and incorporated herein by reference.

"Requirements of this Settlement Agreement" or a similar term means: payments that Respondents are to make under this Settlement Agreement; Work that Respondents are to perform under this Settlement Agreement; scheduled deadlines that Respondents or EPA are to meet under this Settlement Agreement, including deadlines in schedules in EPA-approved submissions; and any other obligation of Respondents or EPA under this Settlement Agreement. It is a violation of this Settlement Agreement for Respondents to fail to perform a requirement of this Settlement Agreement.

"Schedule" means the list of RI/FS activities and Deliverables with dates for completion, prepared and submitted as a part of the RI/FS Work Plan in accordance with the SOW.

"Section" means a portion of this Settlement Agreement identified by a Roman numeral and includes one or more paragraphs. References to sections in the SOW will also be so identified (for example, "SOW Section V").

"Settlement Agreement" means this document, including the Statement of Work and all other attachments to this document and other documents expressly incorporated by reference into this document, and any EPA-approved submissions required under the terms of this document. EPA-approved submissions will be incorporated into and become a part of the Settlement Agreement upon final written approval by EPA.

"Site" means the Star Lake Canal Superfund Site as described in paragraph 10.

"State" means the State of Texas, including the Texas Commission on Environmental Quality and the State Natural Resource Trustees.

"Statement of Work" or "SOW" means the Statement of Work for the development of an RI/FS for the Site, as set forth in Attachment B to this Settlement Agreement. The Statement of Work is incorporated into this Settlement Agreement and is an enforceable part of this Settlement Agreement.

"Submission" means any written materials Respondents are required to produce under this Settlement Agreement, including correspondence, memoranda, notifications, plans, reports, specifications, and schedules. A submission is a Deliverable. Submissions include Work Plans and the schedules therein. Once EPA approves a submission in writing, the submission is incorporated into this Settlement Agreement and becomes an enforceable part of this Settlement Agreement.

"TCEQ" means the Texas Commission on Environmental Quality, formerly known as the Texas Natural Resources and Conservation Commission ("TNRCC").

"TNRCC" means the State of Texas agency formerly known as the Texas Natural Resources and Conservation Commission and which is now known as the Texas Commission on Environmental Quality ("TCEQ").

"Work" means all activities Respondents are required to perform under this Settlement Agreement. Work includes Deliverables.

"Work Plan" means a plan, to be developed by Respondents for EPA review and approval in accordance with the Statement of Work, that includes schedules for and descriptions of Work that Respondents will undertake under this Settlement Agreement.

VI. EPA'S FINDINGS OF FACT

10. The Site consists of Molasses Bayou and two (2) industrial waste canals, the Star Lake Canal and the Jefferson Canal. The Site is located in Jefferson County, Texas, in and around the cities of Port Neches and Groves. The Site is defined as the lengths of the two industrial waste canals from their origins to the confluence of the Star Lake Canal with the Neches River. The straight line distance along the Star Lake Canal from its origin east of the intersection of Highway 136 and FM 366 to its confluence with the Neches River is approximately 16,500 feet. The straight line distance along the Jefferson Canal from its origin on the east side of Hogaboom Road south of FM 366 to its confluence with the Star Lake Canal north of the Hurricane Protection Levee is approximately 4,000 feet. The Groves Drainage Ditch extends several hundred feet between its origin south of FM 366 to its confluence with the Jefferson Canal at or near FM 366. Between Sara Jane Road 9 (aka Port Neches Avenue) and the river, the Star Lake Canal crosses marshes and intersects Molasses Bayou in two locations.

11. Historical unpermitted and permitted discharges (both in compliance with respective permits and in exceedance of, or in violation of, respective permits) into the Star Lake Canal and Jefferson Canal of hazardous substances from industrial processes have resulted in the deposition of the hazardous substances listed in Paragraphs 16 through 19 into and upon the sedimentary bottoms at the Site.

a. Industrial operations have taken place in areas surrounding the Site since the early 1940s. Initial construction of industrial facilities occurred under direction of the government of the United States during World War II, and subsequent operations have continued until the present time. Wastewater discharges from these operations were routed to the Site. The Jefferson Canal was constructed in the late 1940s as an industrial wastewater and stormwater outfall, and the Star Lake Canal was constructed after 1948 for the same purpose.

b. On or about February, 1983, the Jefferson County Drainage District Number 7 ("DD #7") dredged the Jefferson Canal by drag-line after having acquired an easement on the canal from Texaco Chemical Company, which owned the canal at that time. DD #7 deposited the dredge spoil, which was later found to be contaminated with hazardous substances listed in

Paragraphs 16 through 19, onto the banks of Jefferson Canal in and around an area below FM Road 366.

12. Chevron Environmental Management Company is a wholly-owned subsidiary of ChevronTexaco Corporation, the parent corporation of Texaco Inc. as a result of a merger in October 2001. Texaco Inc. was the parent corporation of Texaco Chemical Company ("TCC") until TCC was sold to Huntsman Corporation (n/k/a Huntsman Petrochemical Corporation) in April 1994. TCC was a successor in interest to various entities that operated what are now called the C4 and Oxides and Olefins Plants in Port Neches, Texas, and which owned all or part of Star Lake and Jefferson Canals.

13. Huntsman Petrochemical Corporation ("Huntsman") is the current owner of the Star Lake Canal and a portion of the Jefferson Canal. Huntsman acquired such ownership in April 1994 when it purchased TCC. As a result of that 1994 acquisition, Huntsman also acquired the C4 and Oxides and Olefins Plants in Port Neches.

14. Ameripol Synpol Corporation ("Ameripol") is the current owner of a portion of the west-east segment of the Star Lake Canal. On December 17, 1992, The Uniroyal Goodrich Tire Company conveyed its interest in the Uniroyal Goodrich Tire Company's Port Neches Plant, which includes a solid waste landfill and the west-east segment of the Star Lake Canal to Ameripol. Numerous other industrial facilities have conducted operations that have had an impact on the Star Lake Canal, the Jefferson Canal and the Site generally over the years.

15. On March 21, 1983, and March 23, 1983, the Texas Department of Water Resources collected sediment samples from Jefferson Canal, as well as Jefferson Canal dredge spoil samples and rainfall runoff from such dredge spoil, and observed such samples to have a strong aromatic odor characteristic of phenolic compounds. On March 23, 1983, a Texas Department of Water Resources inspection observed rainfall runoff from dredge spoils along the Jefferson Canal bank entering Jefferson Canal. A further review of state records indicates that sampling of dredged spoils from Jefferson Canal sediments documented the presence of the following contaminants: naphthalene, acenaphthene, acenaphthylene, fluorene, phenanthrene, anthracene, pyrene, benzo(a)anthracene, benzo-b-fluoranthene, benzo(a)pyrene, benzo-a-fluoranthene, chrysene. Property adjacent to the Jefferson Canal may be contaminated with toxaphene and possibly pentachlorophenol.

16. A TNRCC Screening Site Inspection ("SSI") Report of the Star Lake Canal, dated September, 1997, states that the following contaminants were detected in samples collected from the Jefferson Canal and the Star Lake Canal: acenaphthene, acenaphthylene, anthracene, arsenic, barium, benzo(b)fluoranthene, benzo(k)fluoranthene, cyanide, fluoranthene, fluorene, mercury, 2-methylnaphthalene, naphthalene, aroclor-1254 (a polychlorinated biphenyl, "PCB"), phenanthrene, pyrene, and thallium. A table of organic contaminants in the samples contains a hand-written entry that states benzo(a)anthracene, chrysene, and benzo(a)pyrene were also detected. Releases of ten of the above-mentioned substances were detected in downstream

samples. The farthest downstream, contaminated sample, taken in the Star Lake Canal approximately 0.29 miles upstream of the confluence of the Star Lake Canal with the Neches River, indicated detectable concentrations of thallium.

17. A TNRCC Expanded Site Inspection ("ESI") Report for the Star Lake Canal Site, dated January, 1999, includes other contaminants not listed in the September, 1997, TNRCC SSI report. These contaminants include the following: acetone, aldrin, benzene, benzo(g,h,i)pyrene, chromium, copper, 4,4'-DDD, endosulfan I, ethylbenzene, heptachlor epoxide, indeno(1,2,3-cd)pyrene, selenium, silver, styrene, toluene, and total xylenes. However, there were four contaminants previously reported in TNRCC's September, 1997, SSI report which were not reported in TNRCC's January, 1999, ESI report. These four contaminants are as follows: arsenic, barium, cyanide, and mercury.

18. State enforcement investigations conducted during the 1970's focused on pentachlorophenol and toxaphene contamination in the Jefferson Canal. State enforcement action in 1983 identified that toxaphene contaminated sediments may have been dredged from the Jefferson Canal and placed on its banks. A 1983 analytical report for a sample collected from the dredged sediments of the Jefferson Canal's banks indicated that detectable levels of the following contaminants were then present: toxaphene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(p)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, fluorene, naphthalene, phenanthrene, pyrene, and biphenyls.

19. On July 22, 1999, the EPA proposed adding the Star Lake Canal Site to the National Priorities List. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, on August 28, 2000, the Site was subsequently added to the National Priorities List (NPL), 40 C.F.R. Part 300, App. B.

VII. EPA'S CONCLUSIONS OF LAW AND DETERMINATIONS

20. The Site is a "facility" as defined in Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

21. Substances at the Site and released or threatened to be released at the Site, including the substances described in Paragraphs 16 through 19, and the constituents thereof, are "hazardous substances" as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

22. The presence of hazardous substances at the Site or the past, present or potential migration of hazardous substances at or emanating from the Site, constitute actual and/or threatened "releases" as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

23. Each Respondent is a "person" as defined in Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

24. Respondents are potentially responsible parties under Sections 104, 107 and 122 of CERCLA, 42 U.S.C. §§ 9604, 9607 and 9622.

25. The Site conditions described in the EPA Findings of Fact above constitute an actual or threatened release of a hazardous substance from the facility as defined by Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

26. The actions required by this Settlement Agreement are necessary to protect the public health or welfare or the environment, are in the public interest, 42 U.S.C. § 9622(a), are consistent with CERCLA and the NCP, 42 U.S.C. §§ 9604(a)(1), 9622(a), and will expedite effective remedial action and minimize litigation; 42 U.S.C. § 9622(a). If carried out in compliance with the terms of this Settlement Agreement, the actions conducted will be considered consistent with the NCP, as provided in Section 300.700(c)(3)(ii) of the NCP.

VIII. NOTICE

27. By providing a copy of this Settlement Agreement to the State of Texas, EPA is notifying the State that this Settlement Agreement is being issued and that EPA is the lead agency for coordinating, overseeing, and enforcing the response action required by the Settlement Agreement.

IX. WORK TO BE PERFORMED

28. All Work performed under this Settlement Agreement must be under the direction and supervision of qualified personnel. Within 30 days of the effective date of this Settlement Agreement, and before the Work outlined below begins, Respondents shall notify EPA in writing of the names, titles, and qualifications of the personnel, including contractors, subcontractors, consultants and laboratories to be used in carrying out the Work. The qualifications of the persons undertaking the Work for Respondents shall be subject to EPA's review, for verification that such persons meet minimum technical background and experience requirements. This Settlement Agreement is contingent on Respondents' demonstration to EPA's satisfaction that Respondents are qualified to perform properly and promptly the actions set forth in this Settlement Agreement. If EPA disapproves in writing of any person's qualifications, Respondents shall notify EPA of the identity and qualifications of the replacement within 30 days of the written notice. If EPA subsequently disapproves of the replacement, EPA reserves the right to terminate this Settlement Agreement and to conduct a complete RI/FS, and to seek reimbursement for costs and penalties from Respondents. During the course of the RI/FS, Respondents shall notify EPA in writing of any changes or additions in the personnel used to carry out such Work, providing their names, titles, and qualifications. EPA shall have the same right to approve changes and additions to personnel as it has hereunder regarding the initial notification.

29. Respondents shall perform the Work described in this Settlement Agreement

including without limitation the Remedial Investigation and Feasibility Study Statement of Work (RI/FS SOW, or SOW, Attachment B) and any EPA-approved submissions. Respondents shall conduct activities and submit Deliverables as provided by the SOW. All such Work must be conducted in accordance with CERCLA; the NCP; EPA guidance, including the "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA" (OSWER Directive # 9355.3-01), guidance documents referenced therein, and guidance documents referenced in the RI/FS SOW, as may be amended or modified by EPA; the RI/FS SOW; the standards, specifications and other requirements of Work Plans and sampling and analysis plan approved by EPA; and schedules approved by EPA.

30. All major deliverables (as listed in Paragraph 29) that Respondents submit to EPA must contain the following statement, signed by Respondents' Project Coordinator (as named and approved under Paragraph 28):

To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. As to those identified portions of this submission for which I cannot personally verify the truth and accuracy, I certify as the official having supervisory responsibility for the person(s) who, acting under my direct instructions, made the verification that this information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

31. Whenever this Settlement Agreement requires a submission to EPA, the submission must be signed by Respondents' Project Coordinator. Notwithstanding such a delegation of responsibility, each Respondent remains liable for the proper performance of the Work required by this Settlement Agreement.

32. EPA reserves the right to comment on, modify and direct changes for all Deliverables. At EPA's discretion, Respondents must fully correct all deficiencies and incorporate and integrate all information and comments supplied by EPA either in subsequent or resubmitted Deliverables.

33. Respondents shall not proceed further with any subsequent activities or tasks until receiving EPA approval for the following Deliverables: RI/FS Work Plan and sampling and analysis plan, baseline risk assessment chapter of the remedial investigation report, draft remedial investigation report, treatability testing Work Plan and sampling and analysis plan (unless EPA determines treatability studies are not needed after Respondents have demonstrated such to EPA's satisfaction), and draft feasibility study report. While awaiting EPA approval on these Deliverables, Respondents shall proceed with all other tasks and activities which may be conducted independently of these Deliverables, in accordance with the schedule set forth in this Settlement Agreement.

34. For all remaining Deliverables not enumerated above in paragraph 31, unless otherwise specified in the attached RI/FS SOW, Respondents shall proceed with all subsequent tasks, activities and Deliverables without awaiting EPA approval on the submitted deliverable in accordance with the schedule contained in the SOW or other schedules approved by EPA. EPA reserves the right to stop Respondents from proceeding further, either temporarily or permanently, on any task, activity or deliverable at any point during the RI/FS.

35. After review of any submission, EPA may: (a) approve (in whole or in part) the submission; (b) approve the submission but require modifications, which may include deletions or additions prepared by EPA, which Respondents must incorporate into the text of the submission as directed by EPA in writing; (c) disapprove (in whole or in part) the submission and direct Respondents to resubmit the submission after incorporating EPA's modifications, which may include deletions or additions prepared by EPA, which Respondents must incorporate into the text of the submission exactly as directed by EPA in writing; (d) disapprove the submission and assume responsibility for performing all or any part of the RI/FS; or (e) any combination of the above. Once approved by EPA in writing, and subject to the result of any dispute resolution, a submission or an approved portion of a submission is incorporated into and fully enforceable under this Settlement Agreement, and Respondents must proceed to take any action required by the submission.

36. In the event that Respondents amend or revise a report, plan or other submittal upon receipt of EPA comments, if EPA subsequently disapproves of the revised submittal, or if subsequent submittals do not fully reflect EPA's directions for changes, EPA retains the right to seek stipulated or statutory penalties; perform its own studies, complete the RI/FS (or any portion of the RI/FS) under CERCLA and the NCP, and seek reimbursement from the Respondents for its costs; and/or seek any other appropriate relief.

37. Upon receipt of a notice of disapproval or approval with modifications, Respondents must correct the deficiencies and resubmit the submission for approval within the reasonable time specified by EPA in its notice of disapproval or approval with modifications. Notwithstanding the notice of disapproval or approval with modifications, Respondents must proceed, at the written direction of EPA, to take any action required by any non-deficient portion of the submission.

38. If, on resubmission by Respondents, EPA again disapproves a previously disapproved submission, EPA may deem the submission untimely and inadequate, and subject to the results of dispute resolution stipulated penalties will begin to accrue. EPA also retains the right to perform its own studies, complete the RI/FS (or any portion of the RI/FS) under CERCLA and the NCP, and seek reimbursement from Respondents for its costs, and to seek any other appropriate relief.

39. In the event that EPA takes over some of the tasks, but not the preparation of the RI/FS, Respondents shall incorporate and integrate information supplied by EPA into the final

RI/FS report.

40. Failure of EPA to comment on, approve of, or disapprove of Respondents' submissions within a specified period will not constitute approval by EPA. Any failure by EPA to comment on, approve or disapprove any submission before the scheduled date of commencement of Work, when approval is required by that date under the terms of the SOW, operates to extend the Schedule until EPA so acts. In such an instance, the Schedule will be extended by the number of days between the date approval was required and the date EPA acts. Whether or not EPA gives express approval for Respondents' Deliverables, Respondents are responsible for preparing Deliverables acceptable to EPA.

X. EPA'S RISK ASSESSMENTS

41. The Respondents shall perform the baseline human health risk assessment and the ecological risk assessment as specified in the RI/FS SOW (Attachment B).

42. Respondents will prepare a risk assessment report based on the data collected during the site characterization. After considering any significant comments received, EPA will release the report to the public at the same time it releases the final RI report. Both reports will be put into the administrative record for the site.

43. EPA will respond to all significant comments on the memoranda or the risk assessment that are resubmitted during the formal comment period on the Proposed Plan in the Responsiveness Summary of the record of decision.

XI. MODIFICATION OF THE WORK PLAN

44. If at any time during the implementation of this Settlement Agreement Respondents identify a need for additional data, a memorandum documenting the need for additional data shall be submitted to the EPA Remedial Project Manager ("RPM") within 30 days of identification. EPA in its discretion, after consultation with Respondents' Project Coordinator, will determine whether the additional data will be collected by Respondents and whether it will be incorporated into reports and Deliverables.

45. In the event of conditions posing an immediate threat to human health or welfare or the environment, Respondents shall notify EPA and the State immediately. In addition to its authority under the NCP, if EPA determines that the immediate threat or the unanticipated or changed circumstances warrant changes in the Work Plan, EPA may modify or amend the Work Plan in writing accordingly. Respondents shall perform the Work Plan as modified or amended and approved by EPA.

46. In the event of unanticipated or changed circumstances at the Site that may affect conduct of the Work or the schedule under this Settlement Agreement, Respondents shall notify

the EPA Project Coordinator by telephone as soon as practicable, or no longer than three (3) days from discovery of the unanticipated or changed circumstances. EPA and Respondents' Project Coordinator shall discuss the unanticipated or changed circumstances as soon as practicable, and, if they determine that changes to the Work Plan are necessary, EPA shall modify or amend the Work Plan in writing accordingly. Respondents shall perform the Work Plan as modified or amended.

47. EPA may determine that, in addition to tasks defined in the initially approved Work Plan, other Work may be necessary to accomplish the objectives of the RI/FS as set forth in the Statement of Work. EPA may require that Respondents perform such Work in addition to the Work required by the initially approved Work Plan, including any approved modifications, if it determines that such actions are necessary for a complete RI/FS. Respondents must confirm their willingness to perform the additional Work in writing to EPA within thirty (30) days of receipt of the EPA request, or Respondents shall invoke dispute resolution. Subject to resolution of any dispute under Section XX of this Settlement Agreement, Respondents shall implement the additional tasks that EPA determines are necessary. The additional Work must be completed according to the standards, specifications, and schedule set forth or approved by EPA in a written modification to the Work Plan or written Work Plan supplement. EPA reserves the right to conduct the Work itself at any point, to seek reimbursement from Respondents, and/or to seek any other appropriate relief.

XII. EMERGENCY RESPONSE AND NOTIFICATION OF RELEASES

48. If activities conducted under this Settlement Agreement cause or threaten to cause a release of hazardous substances, pollutants, or contaminants from the Site that presents or may present an endangerment to the public health, welfare; or the environment, Respondents must immediately take all appropriate action to prevent, abate or minimize the release and endangerment caused or threatened by the release. Respondents must take these actions in accordance with all applicable provisions of this Settlement Agreement, including the Health and Safety Plan. In addition to notifications otherwise required by law, Respondents also must immediately notify the RPM of the incident and related Site conditions. In addition, Respondents must submit a written report to EPA within seven (7) days after each release, setting forth the events that occurred and the measures taken or to be taken to mitigate the release or endangerment caused or threatened by the release and to prevent the recurrence of such an event.

XIII. QUALITY ASSURANCE

49. Respondents must ensure that Work performed, samples taken and analyses conducted conform to the requirements of the Statement of Work and guidance documents identified therein. Respondents shall assure that field personnel used by Respondents are properly trained in the use of field equipment and in chain of custody procedures.

50. To provide quality assurance and maintain quality control regarding all samples

collected pursuant to this Settlement Agreement, Respondents must:

- (a) Ensure that all contracts with laboratories utilized by Respondents for analysis of samples taken in accordance with this Settlement Agreement provide for access of EPA personnel and EPA authorized representatives.
- (b) Ensure that all laboratories utilized by Respondents for analysis of samples taken in accordance with this Settlement Agreement perform analyses according to EPA methods or alternative methods satisfactory to EPA.
- (c) Ensure that all laboratories utilized by Respondents for analysis of samples taken in accordance with this Settlement Agreement participate in an EPA or EPA-approved QA/QC program or alternative methods as determined by EPA. As part of the QA/QC program and upon request by EPA, such laboratories must perform, at no expense to EPA, analyses of samples provided by EPA to demonstrate the quality of each laboratory's data.

XIV. FINAL RI/FS, PROPOSED PLAN, PUBLIC COMMENT, RECORD OF DECISION, ADMINISTRATIVE RECORD

51. EPA retains the responsibility for the release to the public of the RI/FS report. EPA retains responsibility for the preparation and release to the public of the proposed plan and record of decision in accordance with CERCLA and the NCP.

52. EPA shall provide Respondents with the final proposed plan and record of decision. Any significant comments of Respondents timely submitted to the Proposed Plan and record of decision shall be included in the administrative record.

53. EPA will determine the contents of the administrative record file for selection of the remedial action. Respondents must submit to EPA documents developed during the course of the RI/FS upon which selection of the response action may be based. Respondents shall provide copies of plans, task memoranda including documentation of field modifications, recommendations for further action, quality assurance memoranda and audits, raw data, field notes, laboratory analytical reports and other reports. Respondents must additionally submit any previous studies conducted under state, local or other federal authorities relating to selection of the response action, and all communications between Respondents and state, local or other federal authorities concerning selection of the response action. At EPA's discretion, Respondents may establish a community information repository at or near the site, to house one copy of the administrative record.

XV. PROGRESS REPORTS AND MEETINGS

54. Project Coordinators for Respondents and EPA shall meet regularly during the

initiation, conduct, and completion of all activities under this Settlement Agreement, to discuss general Site progress, anticipated problems, and new issues, including EPA policies, guidance and procedures affecting the tasks and activities conducted under this Settlement Agreement. Additional meetings may be scheduled at EPA's discretion or upon request of Respondents.

55. In addition to the Deliverables set forth in this Settlement Agreement, Respondents must provide to EPA monthly progress reports by the 15th day of the following month. At a minimum, with respect to the preceding month, these progress reports must: (1) describe the actions taken to comply with this Settlement Agreement during that month; (2) include all results of sampling and tests and all other data received by Respondents; (3) describe Work planned for the next two months with schedules relating such Work to the overall project schedule for RI/FS completion; and (4) describe all problems encountered and any anticipated problems, any actual or anticipated delays, and solutions developed and implemented to address any actual or anticipated problems or delays.

56. If EPA determines that any monthly report is deficient, the RPM will notify Respondents' Project Coordinator within 10 days of receipt of the monthly report. Respondents must submit a revised monthly report within 20 days after receipt of notice of deficiency unless EPA allows additional time for response.

XVI. SAMPLING, ACCESS, AND DATA AVAILABILITY/ADMISSIBILITY

57. All results of sampling, tests, modeling or other data (including raw data) generated by Respondents, or on Respondents' behalf, during implementation of this Settlement Agreement, shall be submitted to EPA in the subsequent monthly progress report as described in Section XV of this Settlement Agreement. EPA will make available to the Respondents validated data generated by EPA unless it is exempt from disclosure by any federal or state law or regulation.

58. Respondents must orally notify EPA at least 15 days prior to conducting significant field events as described in the Statement of Work, Work Plan, or sampling and analysis plan. At EPA's oral or written request, or the request of EPA's oversight contractor, Respondents must allow split or duplicate samples to be taken by EPA (and its authorized representatives) or the State (and their authorized representatives) of any samples collected by Respondents in implementing this Settlement Agreement. All split samples of Respondents shall be analyzed by the methods identified in the QAPP or SOW.

59. Pursuant to applicable access agreements and all applicable safety requirements, at all reasonable times EPA and its authorized representatives have the authority to enter the property at the Site and off-site areas where Work is being performed for these purposes:

- inspecting conditions, activities, the results of activities, records, operating logs, and contracts related to the Site or Respondents and its contractor pursuant to this

Settlement Agreement;

- reviewing the progress of the Respondents in carrying out the terms of this Settlement Agreement;
- conducting tests as EPA or its authorized representatives deem necessary;
- using a camera, sound recording device or other documentary type equipment; and verifying the data submitted to EPA by Respondents.

A. The Respondents shall allow these persons to inspect and to designate copies of non-privileged records, files, photographs, documents, sampling and monitoring data, and other writings related to Work undertaken in carrying out this Settlement Agreement. Respondent shall provide copies of such designated materials to these persons as soon as practicable. Nothing herein may be interpreted as limiting or affecting EPA's right of entry or inspection authority under federal law. All parties with access to the Site under this paragraph must comply with all applicable health and safety plans.

B. Respondents may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Respondents assert such a privilege in lieu of providing documents, they shall provide EPA and the State with the following: 1) the title of the document, record, or information; 2) the date of the document, record, or information; 3) the name and title of the author of the document, record, or information; 4) the name and title of each addressee and recipient; 5) a description of the contents of the document, record, or information; and 6) the privilege asserted by Respondents. However, no documents, reports or other information created or generated pursuant to the requirements of this Order shall be withheld on the grounds that they are privileged.

60. Respondents may assert a claim of business confidentiality covering part or all of the information submitted to EPA in accordance with the terms of this Settlement Agreement under 40 C.F.R. § 2.203, provided such claim is allowed by Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7). This claim must be asserted in the manner described by 40 C.F.R. § 2.203(b). Information determined to be confidential by EPA will be given the protection specified in 40 C.F.R. Part 2. If no such claim accompanies the information when it is submitted to EPA, it may be made available to the public by EPA or the state without further notice to Respondents. Respondents agree not to assert confidentiality claims with respect to any data generated under this Settlement Agreement related to site conditions, sampling, or monitoring.

61. In entering into this Settlement Agreement, Respondents waive any objections to any data gathered, generated, or evaluated by EPA, the State or Respondents in the performance or oversight of the work that has been verified according to the quality performance or oversight of the work that has been verified according to the quality assurance/quality control (QA/QC)

procedures required by this Settlement Agreement or any EPA-approved work plans or sampling and analysis plans. If Respondents object to any other data relating to the RI/FS, Respondents must submit to EPA a report that identifies and explains its objections, describes the acceptable uses of the data, if any, and identifies any limitations to the use of the data. If Respondents subsequently discover error(s) in the data, Respondents have the right to withdraw the prior waiver of objections pertaining to those data. Respondents must submit a report that identifies and explains the objections, describes the acceptable uses of the data, if any, and identifies any limitations to the use of the data. The report must be submitted to EPA within 15 days after discovery of the error.

62. If the Site, or an off-site area that is to be used for access or is within the scope of the RI/FS, is owned in whole or in part by parties other than those bound by this Settlement Agreement, Respondents must obtain, or use their best efforts to obtain, site access Settlement Agreements from the present owner(s) within 60 days of the effective date of this Settlement Agreement. Such Settlement Agreements must provide access for EPA, its contractors and oversight officials, the State and its contractors, and Respondents or their authorized representatives, and must specify that Respondents are not EPA's representatives with respect to liability associated with Site activities. Copies of such Settlement Agreements shall be provided to EPA prior to Respondents' initiation of field activities. Respondents' best efforts shall include providing reasonable compensation to any off-site property owner not identified by EPA as a PRP in connection with the Site. If access Settlement Agreements are not obtained within the time referenced above, Respondents must immediately notify EPA of their failure to obtain access. EPA may obtain access for Respondents, perform those tasks or activities with EPA contractors, or terminate the Settlement Agreement in the event that Respondents cannot obtain access Settlement Agreements. So long as Respondents are using reasonable best efforts to obtain access, EPA shall not seek penalties, stipulated or otherwise, for any delay occasioned by the inability to obtain access. In the event that EPA performs those tasks or activities with EPA contractors and does not terminate the Settlement Agreement, Respondents must perform all other activities not requiring access to that Site, and must reimburse EPA for all costs incurred in performing the activities. Respondents additionally must integrate the results of any such tasks undertaken by EPA into its reports and Deliverables. Respondents also must reimburse EPA for all costs and attorney fees incurred by the United States to obtain access for the Respondents from property owner(s).

XVII. DESIGNATED PROJECT COORDINATORS

63. On or before the effective date of this Settlement Agreement, Respondents must designate a Project Coordinator, who will be responsible for administering all of Respondents' Work required by the Settlement Agreement. Respondents must submit the designated Project Coordinator's name, address, telephone number, and qualifications to EPA. To the greatest extent possible, during Work on the Site the Project Coordinator must be present at the Site or readily available. EPA retains the right to at any time disapprove of any Project Coordinator selected by Respondents. If EPA disapproves in writing of a selected Project Coordinator,

Respondents must designate a new Project Coordinator and notify EPA of that person's name, address, telephone number, and qualifications within seven days following EPA's disapproval.

64. Respondents have the right to change their Project Coordinator. At least seven days before the change, EPA must be notified in writing of the designated Project Coordinator's name, address, telephone number, and qualifications.

65. EPA will designate a Remedial Project Manager (RPM) for the Site. EPA's RPM shall have the authority lawfully vested in an RPM and On-Scene Coordinator (OSC) by the NCP. In addition, the RPM shall have the authority, consistent with the NCP, to halt any Work required by this Settlement Agreement, and to take any necessary response action upon determining that conditions at the site may present an immediate and substantial endangerment to public health or welfare or the environment. The absence of the RPM from the area under study pursuant to this Settlement Agreement is not cause for the stoppage or delay of Work. EPA has the right to change its designated RPM. Respondents must be notified of the change in writing

66. To the greatest extent possible, communications between Respondents and EPA should be directed to the Project Coordinator and RPM in writing. Communications include all documents, reports, notices, approvals, and other correspondence submitted under this Settlement Agreement and as specified in the RI/FS SOW (Attachment B). All communications submitted under this Settlement Agreement must be directed as follows:

(a) Documents to be submitted to EPA should be sent to:

Mr. Philip Allen (Remedial Project Manager)
U.S. Environmental Protection Agency, Region 6
Superfund Division (6SF-AP)
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733
Telephone # - (214) 665-8516
E-Mail Address - allen.philip@epa.gov

and any other addresses designated by EPA in the RI/FS SOW (Attachment B).

(b) Documents to be submitted to Respondents should be sent to:

Gary Jacobson
CEMC
5959 Corporate Drive
Houston, Texas 77036

Lon Tullos, Manager - Environmental
Manager - EHS Financial and Legacy Matters
Huntsman LLC
10003 Woodloch Forest Drive
The Woodlands, TX 77380

Respondents must notify EPA in writing of any change in this address.

67. EPA may arrange for a qualified person to assist in its oversight and review of the conduct of the RI/FS, as required by Section 104(a) of CERCLA, 42 U.S.C. § 9604(a). The oversight assistant may observe Work and make inquiries in the absence of EPA, but is not authorized to modify the Work Plan.

XVIII. OTHER APPLICABLE LAWS

68. Respondents shall comply with all applicable local, state, and federal laws and regulations when performing the RI/FS. No local, state, or federal permit is required for any portion of any action conducted entirely on-Site, including studies, if the action is selected and carried out in compliance with Section 121 of CERCLA.

XIX. RECORD PRESERVATION

69. All records and documents in EPA's and Respondents' possession that relate in any way to the conduct of Work under this Settlement Agreement must be preserved for the duration of this Settlement Agreement and for a minimum of 10 years after commencement of construction of any remedial action. Respondents must acquire and retain copies of all documents that relate to the Site and are in the possession of its employees, agents, accountants, contractors, or attorneys. After this 10-year period, if EPA requests that the documents be saved, Respondents must, at no cost to EPA, give EPA the documents or copies of the documents.

XX. DISPUTE RESOLUTION

70. Any disputes concerning activities or Deliverables required under this Settlement Agreement shall be resolved as follows:

- (a) The Project Coordinators and the RPM shall first attempt to resolve all matters in dispute expeditiously and informally. The initial period for informal dispute resolution shall not exceed twenty (20) business days from the time that the dispute arises. The period for informal dispute resolution may be modified by written Settlement Agreement of the parties to the dispute.
- (b) If a matter in dispute has not been resolved informally, and the Respondents object to any EPA notice of disapproval or requirement made pursuant to this Settlement Agreement, Respondents shall notify EPA's Project Coordinator in writing of its objections within twenty (20) business days of receipt of the disapproval notice or requirements. Respondents' written objections shall define the dispute and state the basis of Respondents' objections. Respondents' obligations under this Settlement Agreement shall not be tolled by submission of any objection for dispute resolution under this Section. EPA and the Respondents shall have an additional fourteen (14) business days

from Respondents' written objections to resolve the dispute through formal negotiations (the "Negotiation Period"). The Negotiation Period may be extended at the sole discretion of EPA.

- (c) Any Settlement Agreement reached by the parties or decision by EPA pursuant to this Section shall be in writing and shall, upon signature by both parties, be incorporated into and become an enforceable part of this Settlement Agreement. If the parties are unable to reach Settlement Agreement within the Negotiation Period, an EPA management official at the Division Director level will issue a written decision, including his or her reasons, that shall be based on consideration of the information exchanged by the parties on the dispute. EPA's decision shall be incorporated into and become an enforceable part of this Settlement Agreement, and that decision shall constitute final agency action.
- (d) If an Settlement Agreement is not reached within the 14 day Negotiation Period, Respondents may request a determination by EPA's Director of the Superfund Division, EPA Region 6 ("Division Director"). The Division Director's determination is EPA's final decision. Respondents must proceed in accordance with EPA's final decision. Following resolution of the dispute, as provided by this Section, Respondents shall fulfill the requirement that was the subject of the dispute in accordance with the Settlement Agreement reached or with EPA's decision. If the Respondents do not agree to perform or do not actually perform the work in accordance with EPA's final decision, EPA reserves the right in its sole discretion to conduct the work itself, to seek reimbursement from Respondents, to seek enforcement of the decision, to seek stipulated penalties, and/or to seek any other appropriate relief.
- (e) Unless EPA agrees otherwise in writing, Respondents are not relieved of their obligations to perform and conduct activities and submit Deliverables on the schedule set forth in the Work Plan while a matter is pending in dispute resolution. The invocation of dispute resolution shall stay the accrual of stipulated penalties during the period beginning on the 14th day after the Negotiation Period begins until the date that the Director of the Superfund Division issues a final decision regarding such dispute. Penalties shall continue to accrue as provided in this paragraph during any dispute resolution period, but need not be paid until 15 days after the dispute is resolved by Settlement Agreement or by receipt of EPA's decision.

XXI. DELAY IN PERFORMANCE/STIPULATED PENALTIES

71. The EPA shall provide written notice to Respondents in accordance with the Settlement Agreement of any failure to complete a deliverable in a timely manner, to produce a deliverable of acceptable quality, or otherwise to perform in accordance with the requirements of this Settlement Agreement. If Respondents do not, within twenty (20) days of receipt of the notice, either cure such default or invoke the Dispute Resolution procedures set forth in Section XX, then Respondents shall be liable for stipulated penalties. Penalties begin to accrue on the

twenty-first (21st) day from receipt of such notice from the EPA. However, no penalties shall accrue during the Dispute Resolution process of Section XX. All such penalties set forth in this section are discretionary by the EPA and may be waived upon production of the deliverable or compliance with this Settlement Agreement. Payment shall be due within 30 days of receipt of a demand letter from EPA, unless Respondents invoke the dispute resolution process.

72. Respondents must pay interest on the unpaid balance, which shall begin to accrue at the end of the 30-day period, at the rate established by the Department of Treasury in accordance with 30 U.S.C. § 3717. Respondents must further pay a handling charge of 1 percent, to be assessed at the end of each 31 day period, and a 6 percent per annum penalty charge, to be assessed if the penalty is not paid in full within 90 days after it is due.

73. Respondents must make all payments by forwarding a check to:

Mellon Bank
EPA Superfund – Star Lake Canal Superfund Site (06GY)
CERCLIS #: TX0001414341
Cincinnati Accounting Operation – Region 6
P.O. Box 371099M
Pittsburgh, Pennsylvania 15251

Checks should identify the name of the site, the site identification number, the account number, and the title of this Settlement Agreement. A copy of the check and any transmittal letter must be forwarded to the RPM.

74. For the following major Deliverables, stipulated penalties shall accrue in the amount of \$500 per day, per violation, for the first seven (7) days of noncompliance; \$1,000 per day, per violation, for the 8th through 14th days of noncompliance; \$2,000 per day, per violation, for the 15th through 30th days of noncompliance; and \$3,000 per day, per violation, for all violations lasting beyond 30 days.

- 1) An original and any revised Work Plan.
- 2) An original and any revised sampling and analysis plan.
- 3) An original and any revised remedial investigation report.
- 4) An original and any revised treatability testing Work Plan.
- 5) An original and any revised treatability study sampling and analysis plan.
- 6) An original and any revised feasibility study report.

7) An original and any revised risk assessment report.

75. For all other Deliverables, stipulated penalties will accrue in the amount of \$250 per day, per violation, for the first seven (7) days of noncompliance; \$500 per day, per violation, for the 8th through 14th days of noncompliance; \$1,000 per day, per violation, for the 15th through 30th days of noncompliance; and \$2,000 per day, per violation, for all violations lasting beyond 30 days.

76. For the monthly progress reports, stipulated penalties shall accrue in the amount of \$500 per day, per violation, for the first 7 days of noncompliance; \$1,000 per day, per violation, for the 8th through 14th days of noncompliance; \$2,000 per day, per violation, for the 15th through 30th days of noncompliance; and \$3,000 per day, per violation, for all violations lasting beyond 30 days.

77. Respondents may dispute EPA's right to penalties by invoking the dispute resolution procedures under Section XX. Penalties shall accrue but need not be paid during the dispute resolution period. If Respondents do not prevail upon resolution, all penalties shall be due to EPA within 30 days of resolution of the dispute. If Respondents prevail upon resolution, no penalties shall be paid.

78. In the event that EPA provides for corrections to be reflected in the next deliverable and does not require resubmission of that deliverable, stipulated penalties for that interim deliverable shall not accrue. Further, should Respondents disagree with any required modification, addition, or amendment, Respondents may invoke the dispute resolution procedure found in Section XX of this Settlement Agreement. Finally, no penalty for failure to submit any deliverable or for any failure to perform in accordance with this Settlement Agreement shall result in the imposition of any penalty if such failure to act is based upon any force majeure event.

79. The stipulated penalties provisions do not preclude EPA from pursuing any other remedies or sanctions which are available to EPA because of Respondents' failure to comply with this Settlement Agreement, including but not limited to conduct of all or part of the RI/FS by EPA. Payment of stipulated penalties does not alter Respondents' obligation to complete performance under this Settlement Agreement.

XXII. FORCE MAJEURE

80. "Force majeure," for purposes of this Settlement Agreement, is defined as any event arising from causes entirely beyond the control of Respondents and of any entity controlled by Respondents, including their contractors and subcontractors, that delays the timely performance of any obligation under this Settlement Agreement notwithstanding Respondents' best efforts to avoid the delay. The requirement that Respondents exercise "best efforts to avoid the delay" includes using best efforts to anticipate any potential force majeure event and best

efforts to address the effects of any potential force majeure event (1) as it is occurring and (2) following the potential force majeure event, such that the delay is minimized to the greatest extent practicable. Examples of events that are not force majeure events include, but are not limited to, reasonably increased costs or expenses of any Work to be performed under this Settlement Agreement or the financial difficulty of Respondents to perform such Work.

81. If any event occurs or has occurred that may delay the performance of any obligation under this Settlement Agreement, whether or not caused by a force majeure event, Respondents must notify by telephone the Remedial Project Manager or, in his or her absence, the Director of the Superfund Division, EPA Region 6, within 48 hours of when the Respondents knew or should have known, based on information actually made available to Respondents, or information Respondents should have been aware of, that the event might cause a delay. Within five business days thereafter, Respondents must provide in writing the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to mitigate the effect of the delay; and a statement as to whether, in the opinion of Respondents, such event may cause or contribute to an endangerment to public health, welfare or the environment. Respondents must exercise best efforts to avoid or minimize any delay and any effects of a delay. Failure to comply with the above requirements will preclude Respondents from asserting any claim of force majeure.

82. If EPA agrees that the delay or anticipated delay is attributable to force majeure, the time for performance of the obligations under this Settlement Agreement that are directly affected by the force majeure event shall be extended by Settlement Agreement of the parties, pursuant to Section XI of this Settlement Agreement, for a period of time not to exceed the actual duration of the delay caused by the force majeure event. An extension of the time for performance of the obligation directly affected by the force majeure event shall not, of itself, extend the time for performance of any subsequent obligation, unless such extension is agreed upon by the parties pursuant to Section XI of this Settlement Agreement. If an event is deemed to be attributable to force majeure pursuant to this paragraph, the delay shall be deemed not to be a violation of the affected obligation of this Settlement Agreement.

83. If EPA does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, or does not agree with Respondents on the length of the extension, the issue shall be subject to the dispute resolution procedures set forth in section XX of this Settlement Agreement. In any such proceeding, to qualify for a force majeure defense, Respondents shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay was or will be warranted under the circumstances, that Respondents did exercise or are exercising due diligence by using their best efforts to avoid and mitigate the effects of the delay, and that Respondents complied with the requirements of Paragraph 81.

84. Should Respondents carry the burden set forth in Paragraphs 81 and 83, the delay

at issue shall be deemed not to be a violation of the affected obligation of this Settlement Agreement.

XXIII. REIMBURSEMENT OF PAST COSTS

85. EPA agrees not to seek past response costs in this Settlement Agreement. However, EPA reserves the right to seek recovery of past response costs incurred at the Site in future administrative or judicial actions, pursuant to EPA's respective authority. Such past response costs include all costs, including, but not limited to, direct and indirect costs, that the United States and the State, including, but not limited to, its employees, agents, contractors, consultants, and other authorized representatives, incurred regarding the Site that are not covered as Future Response Costs, as defined in this Settlement Agreement.

XXIV. REIMBURSEMENT OF, AND SPECIAL ACCOUNT FOR, FUTURE RESPONSE COSTS

86. In accordance with Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3), Respondents agree to provide funds to EPA for the payment of Future Response Costs. EPA will establish the Star Lake Canal Special Account within the EPA Hazardous Substance Superfund (the "Star Lake Canal Special Account") to retain those funds, which EPA will use for the payment of Future Response Costs incurred by the United States or the State with respect to this Settlement Agreement. Future Response Costs shall mean those costs defined in Paragraph 9 of this Settlement Agreement.

87. In accordance with Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3), Respondents agree to provide funds to EPA according to the procedures and time frames described in this Section for the payment of Future Response Costs paid by EPA after the effective date of the Settlement Agreement. EPA will establish a reimbursable special account (the "Star Lake Canal Special Account") within the EPA Hazardous Substance Superfund to retain those funds, which EPA will use for the payment of Future Response Costs incurred by the EPA with respect to this Settlement Agreement. The total amount to be paid by Respondents shall be deposited in the Star Lake Canal Special Account.

88. EPA has estimated that the amount of Future Response Costs that will be expended at this Site on an annual basis will be \$90,000. Based on this estimate, within 30 days of the effective date of this Order, Respondents shall pay \$25,000 to be deposited in the Star Lake Canal Special Account by Electronic Funds Transfer ("EFT"), in accordance with EFT instructions provided by EPA, or by submitting a certified or cashier's check made payable to "EPA Hazardous Substance Superfund" to:

Mellon Bank
EPA Superfund – Star Lake Canal Superfund Site (06GY)
CERCLIS #: TX0001414341

Cincinnati Accounting Operation – Region 6
P.O. Box 371099M
Pittsburgh, Pennsylvania 15251

Respondents shall reference the "Star Lake Canal Superfund Site (06GY), CERCLIS #: TX0001414341," the name and address of the Respondents, the words "EPA Docket Number CERCLA 06-02-06 Ongoing Response Costs Special Account" on each check. Respondents shall forward a copy of the check and any transmittal letter to the RPM and to:

Chief, Superfund Cost Recovery Section (6SF-AC)
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

89. Whenever the Star Lake Canal Special Account is drawn down by EPA to a balance of approximately \$7500, EPA will send a notice to Respondents and, if warranted, will provide an adjusted estimate of Future Response Costs to be expended annually by EPA. In addition, EPA will submit to Respondents an accounting summary of Response Costs paid from the Star Lake Canal Special Account since the effective date of this Settlement Agreement. The Standard Cost Accounting Report shall be in the form of an unreconciled SCORPIOS cost summary report or some other equivalent unreconciled EPA accounting summary. If Respondents need more detailed information about a specific cost summarized in the above report, Respondents may contact in writing the RPM to inquire about the specific details. The RPM will, within 14 days of such contact, attempt to provide the requested information. After the expiration of this 14-day period, Respondents may request that EPA prepare and certify a Reconciled Cost Accounting Package of Future Response Costs paid since the effective date of this Settlement Agreement. The EPA's cost of preparing the package is a Future Response Cost payable from the Star Lake Canal Special Account.

90. If the Star Lake Canal Special Account is depleted to an amount of \$3500 or less at the time EPA submits a notification and cost accounting summary to Respondents, Respondents shall pay, within ten days of EPA's notice, \$10,000 to the Star Lake Canal Special Account in accordance with the procedure described in Paragraph 88, including without limitation the procedure for providing notice of the remittance. Respondents shall remit the remaining amount to replenish the Star Lake Canal Special Account to \$25,000 in accordance with the procedures and time frames described in Paragraphs 88, 89 and 91.

91. Respondents shall, within 30 days of receipt of a notice and Response Cost accounting summary (*i.e.*, the SCORPIOS report or its equivalent), in accordance with the procedure described in Paragraph 88, remit to the Star Lake Canal Special Account (by EFT, certified check, or cashier's check) the amount EPA identifies as necessary to replenish the Star Lake Canal Special Account to a balance of \$25,000. Respondents shall make such payments

according to the procedures described in Paragraph 88. Neither dispute resolution nor a request to the RPM for more detailed information nor a request for a certified cost accounting shall delay the date that Respondents' payments are due under this paragraph.

92. Following the issuance of this Settlement Agreement, EPA will submit to Respondents on an annual basis an accounting of Future Response Costs, including oversight costs, incurred by the U.S. Government with respect to this RI/FS. Any summaries, including EPA's Standard Cost Accounting Report, or such other summary by EPA, shall serve as the basis for notice of replenishment. The Respondents will have 30 days to request detailed backup information to support all or part(s) of the summaries. This detail information may include, but is not limited to, contractor invoices, signed EPA employee time sheets, travel expense authorizations and reports, and other reimbursement documentation. Respondents will make payment for response costs within 30 days of receipt of this backup information as specified in Paragraphs 88 through 92.

93. Respondents must, within 30 days of receipt of each notice, remit a certified or cashier's check, or an Electronic Funds Transfer (EFT) in accordance with EFT instructions provided by the EPA, for the amount of those costs. Interest will accrue from the date of the bill and shall continue to accrue until the date of payment. The interest rate is the rate of interest on investments for the Hazardous Substances Superfund in Section 107(a) of CERCLA.

94. Respondents may contest payment of any Future Response Costs under Paragraphs 88 through 90 if they determine that EPA has made an accounting error or if they believe EPA incurred excess costs as a direct result of an EPA action that was inconsistent with the NCP. Respondents may invoke the Dispute Resolution provisions of this Settlement Agreement regarding Future Response Costs only after Respondents have made an inquiry, regarding the costs in question, to the RPM as described in Paragraph 89, and the 14-day period in which the RPM is to respond has expired. Respondents must identify any contested costs and provide the basis of its objection. Such objection shall be made in writing within 30 days of receipt of the notification of replenishment and must be sent to the EPA RPM. All undisputed costs must be remitted by Respondents in accordance with the schedule set forth above. Simultaneously, Respondents shall establish an interest-bearing escrow account in a federally-insured bank duly chartered in the State of Texas and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. Respondents shall send to the EPA RPM a copy of the transmittal letter and check paying the uncontested Future Response Costs, and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. Simultaneously with establishment of the escrow account, Respondents shall initiate the Dispute Resolution Procedures in Section XX (Dispute Resolution). If EPA prevails in the dispute, within 5 days of the resolution of the dispute, Respondents shall pay the sums due (with accrued interest) to EPA in the manner described in Paragraph 88. If Respondents prevail concerning any aspect of the contested costs, Respondents shall pay that portion of the costs (plus

associated accrued interest) for which they did not prevail to EPA in the manner described in Paragraph 88. Respondents shall be disbursed any balance of the escrow account. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XX (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding Respondents' obligation to reimburse EPA for its Future Response Costs. Respondents bear the burden of establishing an EPA accounting error or the inclusion of costs not inconsistent with the NCP.

95. EPA will remit and return to Respondents any balance that remains on the date of termination of this Settlement Agreement in the Star Lake Canal Special Account, or "rollover" the balance to another oversight account for the benefit of the Respondents in a subsequent action on this Site, for which the Respondents assume the lead. Termination and satisfaction of the terms of this Settlement Agreement will be in accordance with Section XXX (Termination and Satisfaction). EPA's obligation to return funds to Respondents from the Star Lake Canal Special Account shall terminate upon EPA's assumption of performance of any portion of the work pursuant to this Settlement Agreement.

XXV. COVENANTS NOT TO SUE BY EPA

96. In consideration of the actions that will be performed and the payments that will be made by Respondents under the terms of this Settlement Agreement, and except as otherwise specifically provided in this Settlement Agreement, EPA covenants not to sue or to take administrative action against Respondents pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. § 9606 and 9607(a), for the Work and Future Response Costs. This covenant not to sue shall take effect upon the Effective Date and is conditioned upon the complete and satisfactory performance by Respondents of all obligations under this Settlement Agreement, including, but not limited to, payment of Future Response Costs pursuant to Section XXIV. This covenant not to sue extends only to Respondents and does not extend to any other person.

XXVI. RESERVATIONS OF RIGHTS BY EPA

97. Except as specifically provided in this Settlement Agreement, nothing herein shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants, or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing herein shall prevent EPA from seeking legal or equitable relief to enforce the terms of the Settlement Agreement, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring Respondents in the future to perform additional activities pursuant to CERCLA or any other applicable law.

98. The covenant not to sue set forth in Section XXV above does not pertain to any matters other than those expressly identified therein. EPA reserves, and this Settlement Agreement is without prejudice to, all rights against Respondents with respect to all other

matters, including, but not limited to:

- (a) claims based on a failure by Respondents to meet a requirement of this Settlement Agreement;
- (b) liability for costs not included within the definition of Future Response Costs;
- (c) liability for performance of response action other than the Work;
- (d) criminal liability;
- (e) liability for damages from injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;
- (f) liability arising from the past, present, or future disposal, release or threatened release of hazardous substances outside of the Site; and
- (g) liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry related to the Site.

99. Following satisfaction of the requirements of this Settlement Agreement, Respondents shall have resolved their liability to EPA for the Work performed and Future Response Costs paid by Respondents pursuant to this Settlement Agreement. Respondents are not released from liability, if any, for any response actions taken beyond the scope of this Settlement Agreement regarding removals, other operable units, remedial design/remedial action of this operable unit, or activities arising pursuant to Section 121(c) of CERCLA.

XXVII. COVENANT NOT TO SUE BY RESPONDENTS

100. Respondents covenant not to sue and agree not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to the Work, Future Response Costs, or this Settlement Agreement, including, but not limited to:

- a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund established by 26 U.S.C. § 9507, based on Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;
- b. any claim arising out of the Work or arising out of the response actions for which the Future Response Costs have or will be incurred, including any claim under the United States Constitution, the State Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law; or

- c. any claim against the United States pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, relating to the Work or payment of Future Response Costs.
- d. Notwithstanding subparagraph c, because this is an interim settlement of less than all of Respondents' liability at the Site, Respondents reserve their right to assert claims, if any, for contribution against the United States solely on the basis of any alleged direction, control or involvement of agencies or instrumentalities of the United States with the facilities operating within or impacting upon the Star Lake Canal Superfund Site at the time of disposal of hazardous substances there or with dredging or dredge disposal activities in the canals or the Neches River or connected waterways that allegedly impacted the Site that occurred prior to the commencement of Work.

101. These covenants not to sue shall not apply in the event the United States brings a cause of action or issues an order pursuant to the reservations set forth in Paragraphs 98, 99, and 100, but only to the extent that Respondents' claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservations.

102. Nothing in this Settlement Agreement shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

XXVIII. CONTRIBUTION PROTECTION AND RIGHTS

103. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(2), 42 U.S.C. § 9613(f)(2), and that Respondents are entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f) and 9622(h)(4), for "matters addressed" in this Settlement Agreement. The "matters addressed" in this Settlement Agreement are the Work and Future Response Costs.

104. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B), pursuant to which Respondent has resolved its liability to the United States for Work and Future Response Costs.

105. Except as provided in Section XXVII (Covenant Not to Sue by Respondents), nothing in this Settlement Agreement precludes the United States or Respondents from asserting any claims, causes of action, or demands against any persons not parties to this Settlement

Agreement for indemnification, contribution, or cost recovery. Nothing herein diminishes the right of the United States, pursuant to Sections 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2)-(3), to pursue any such persons to obtain additional response costs or response action and to enter into settlements that provide contribution protection to such persons.

XXVIII. RESERVATIONS OF RIGHTS AND REIMBURSEMENT OF OTHER COSTS

106. Subject to the Dispute Resolution provisions set out above in Section XX, EPA reserves the right to perform its own studies; to terminate, take over, or undertake activities required under this Settlement Agreement in the event of deficient submissions or other nonperformance; to seek reimbursement for the costs of those actions; and to seek any other appropriate relief. EPA will consult with Respondents' Project Coordinator in advance regarding such studies and activities.

107. Except as expressly provided in this Settlement Agreement, each party to this Settlement Agreement reserves all rights and defenses it may have. Nothing in this Settlement Agreement affects EPA's removal authority or EPA's response or enforcement authorities, including the right to seek injunctive relief, stipulated penalties, statutory penalties, and/or punitive damages.

XXIX. DISCLAIMER

108. By signing this Settlement Agreement and taking actions under this Settlement Agreement, Respondents do not necessarily agree with EPA's Findings of Fact and Conclusions of Law. Furthermore, the participation of the Respondents in this Settlement Agreement shall not be considered an admission of liability and is not admissible in evidence against the Respondents in any judicial or administrative proceeding other than a proceeding brought by the United States, including EPA, to enforce this Settlement Agreement or a judgment relating to it as described in paragraph 3. Respondents agree not to contest the validity or terms of this Settlement Agreement, or the procedures underlying or relating to it in any action brought by the United States, including EPA, to enforce its terms. Respondents retain their rights to assert claims against other potentially responsible parties at the Site.

XXX. OTHER CLAIMS

109. In entering into this Settlement Agreement, Respondents waive any right to seek reimbursement under Section 106(b) of CERCLA, 42 U.S.C. § 9606(b). Respondents also waive any right to present a claim under Section 111 or 112 of CERCLA. This Settlement Agreement does not constitute any decision on preauthorization of funds under Section 111(a)(2) of CERCLA. Respondents further waive all other statutory and common law claims against EPA, including, but not limited to, contribution and counterclaims, relating to or arising out of conduct of the RI/FS.

110. Nothing in this Settlement Agreement shall constitute or be construed as a release from any claim, cause of action or demand in law or equity against any person, firm, partnership, subsidiary or corporation not a signatory to this Settlement Agreement for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous substances, pollutants, or contaminants found at, taken to, or taken from the Site. Nothing in this Settlement Agreement may be construed to create any rights in, or grant any cause of action to, any person not a party to this Settlement Agreement.

111. Respondents shall not seek their own costs and attorneys fees from EPA.

XXXI. FINANCIAL ASSURANCE, INSURANCE, AND INDEMNIFICATION

112. Within 30 days of the Effective Date, Respondents shall select either of the financial assurance demonstration methods set out in paragraph 112 or paragraph 113.

113. Respondents shall individually or collectively demonstrate their financial ability to perform the Work and any obligations under this Settlement Agreement, including a margin for cost overruns, pursuant to the financial assurance tests set out in 40 C.F.R. § 264.143, including, but not limited to, a financial test and corporate guarantee for closure.

114. Alternatively, Respondents shall individually or collectively establish and maintain a financial instrument or trust account or other financial mechanism acceptable to EPA, funded sufficiently to perform the Work and any other obligations required under this Settlement Agreement, including a margin for cost overruns. Within 30 days after the effective date of this Settlement Agreement, Respondents shall establish and maintain the financial instrument or trust account sufficiently to perform the Work required under this Settlement Agreement projected for the period beginning with the effective date of the Settlement Agreement until Termination and Satisfaction pursuant to Section XXXIII of this Settlement Agreement. Within 30 days from the Effective Date of this Settlement Agreement, and on or before the 15th calendar day of each calendar year quarter thereafter, Respondents shall fund the financial instrument or trust account sufficiently to perform the Work and other activities required under this Settlement Agreement projected for the succeeding calendar year quarter.

115. If at any time the net worth of the financial instrument or trust account is insufficient to perform the Work and other obligations under the Settlement Agreement for the upcoming quarter, Respondents must provide written notice to EPA within thirty (30) days after the net worth of the financial instrument or trust account becomes insufficient. The written notice must describe why the financial instrument or trust account is insufficient and explain what actions have been or will be taken to fund the financial instrument or trust account adequately.

116. (a) Prior to commencement of any Work under this Settlement Agreement, Respondents must secure, and must maintain in force for the duration of this Settlement Agreement, Commercial General Liability (CGL) and automobile insurance, with limits of \$2 million dollars, combined single limit, naming as additional insured the United States. The CGL insurance must include Contractual Liability Insurance in the amount of \$1,000,000 per occurrence, and Umbrella Liability Insurance in the amount of \$2,000,000 per occurrence.

(b) Respondents must also secure, and maintain in force for the duration of this Settlement Agreement and for two years after the completion of all activities required by this Settlement Agreement, the following:

i. Professional Errors and Omissions Insurance in the amount of \$1,000,000.00 per claim/aggregate.

ii. Pollution Liability Insurance in the amount of \$1,000,000.00 per occurrence.

(c) For the duration of this Settlement Agreement, Respondents must satisfy, or must ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of employer's liability insurance and Workmen's compensation insurance for all persons performing Work on behalf of the Respondents in furtherance of this Settlement Agreement.

(d) If Respondents demonstrate by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then with respect to that contractor or subcontractor Respondents need provide only that portion of the insurance described above that is not maintained by the contractor or subcontractor.

(e) Prior to commencement of any Work under this Settlement Agreement, and annually thereafter on the anniversary of the effective date of this Settlement Agreement, Respondents must provide to EPA certificates of such insurance and a copy of each insurance policy.

117. At least seven (7) days prior to commencing any Work under this Settlement Agreement, Respondents must certify to EPA that the required insurance has been obtained by that contractor.

118. Respondents agree to indemnify and hold the United States Government, its agencies, departments, agents, and employees harmless from any and all claims or causes of action arising from or on account of negligent or wrongful acts or omissions of Respondents, their employees, agents, servants, receivers, successors, or assignees, or any persons, including, but not limited to, firms, corporations, subsidiaries and contractors, in carrying out activities

under this Settlement Agreement. The United States Government or any agency or authorized representative thereof shall not be held as a party to any contract entered into by Respondents in carrying out activities under this Settlement Agreement.

XXXII. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION

119. The effective date of this Settlement Agreement shall be the date it is signed by EPA

120. This Settlement Agreement may be amended by mutual Settlement Agreement of EPA and the Respondents. Amendments must be in writing and shall be effective when signed by EPA. The EPA RPM does not have the authority to sign amendments to the Settlement Agreement.

121. No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules, and any other writing submitted by Respondents will be construed as relieving Respondents of their obligation to obtain such formal approval as may be required by this Settlement Agreement. Any Deliverables, plans, technical memoranda, reports (other than progress reports), specifications, schedules and attachments required by this Settlement Agreement are automatically incorporated into this Settlement Agreement upon approval by EPA.

XXXIII. TERMINATION AND SATISFACTION

122. This Settlement Agreement shall terminate when Respondents demonstrate in writing and certify to the satisfaction of EPA that all activities required under this Settlement Agreement, including all activities required under the Statement of Work, any additional Work, payment of Future Response Costs, and any stipulated penalties demanded by EPA, have been performed and EPA has approved the certification. Within thirty (60) days of receipt of such demonstration and certification from Respondents, EPA shall provide Respondents a written determination on such demonstration and certification. If EPA determines that any such Work has not been completed in accordance with this Settlement Agreement, EPA will notify Respondents, provide a list of deficiencies, and require that Respondents modify the RI/FS Work Plan if appropriate in order to correct such deficiencies. Failure by Respondents to implement the approved modified RI/FS Work Plan shall be a violation of this Settlement Agreement. The certification and EPA's approval of it shall not, however, terminate Respondents' obligation to comply with Sections XIX (Record Preservation), XXIV (Reimbursement of, and Special Account for, Future Response Costs) and XXVI (Reservation of Rights) of this Settlement Agreement.

123. The certification described in the preceding paragraph must be signed by a responsible official representing each Respondent. Each representative must make the following attestation: I certify that the information contained in or accompanying this certification is true, accurate, and complete. For purposes of this Settlement Agreement, a responsible official is a corporate official who is in charge of a principal business function.

BY: Elizabeth E. McDaniel DATE: 9/21/05
Respondent;

Elizabeth E. McDaniel, V.P. EHS, Americas
Print Name and Title Huntsman Petrochemical Corporation

BY: _____ DATE: _____
Respondent.

Print Name and Title

BY: John R. Hepola, for DATE: 12/22/05
Sam Coleman, P.E.
Director, Superfund Division
U.S. Environmental Protection Agency
Region 6

123. The certification described in the preceding paragraph must be signed by a responsible official representing each Respondent. Each representative must make the following attestation: I certify that the information contained in or accompanying this certification is true, accurate, and complete. For purposes of this Settlement Agreement, a responsible official is a corporate official who is in charge of a principal business function.

BY: Robert John DATE: 10/24/05
Respondent;

Robert John, Assistant Secretary CEMC
Print Name and Title

BY: _____ DATE: _____
Respondent.

Print Name and Title

BY: John R. Hepala, for DATE: 12/22/05
Sam Coleman, P.E.
Director, Superfund Division
U.S. Environmental Protection Agency
Region 6

ATTACHMENT A

List of Potentially Responsible Parties to the Administrative Settlement Agreement:

1. **Huntsman Petrochemical Corporation**
2. **Chevron Environmental Management Company**

**ATTACHMENT B
STATEMENT OF WORK
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
STAR LAKE CANAL SUPERFUND SITE
JEFFERSON COUNTY, TEXAS**

I. INTRODUCTION

Purpose of the Statement of Work

1. This Statement of Work (SOW) sets forth certain requirements of the Administrative Order on Consent (AOC) for a Remedial Investigation and Feasibility Study (RI/FS) for the Star Lake Canal Superfund Site (hereinafter "the Site").

Objectives of the Remedial Investigation/Feasibility Study

2. The objectives of the RI/FS are to investigate the nature and extent of contamination at the Site and to develop and evaluate potential remedial alternatives, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, 42 U.S.C. § 9601, *et seq.*); as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA); and in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (National Contingency Plan [NCP]). Specifically, these objectives are to determine the presence or absence, types, and quantities (concentrations) of contaminants; mechanism of contaminant release to pathway(s); direction of pathway(s) transport; boundaries of source(s) and pathway(s); and environmental/public health receptors.

Scope of the Remedial Investigation and Feasibility Study

3. The general scope of the RI/FS shall be to address all contamination at the Site resulting from the hazardous substances present at the Site.

Description of the Site

4. The Site is described in Paragraph 10 of the AOC.

Statement of Work for RI/FS, Star Lake Canal Superfund Site

II. PERFORMANCE STANDARDS

5. The Performance Standards for this RI/FS shall include substantive requirements, criteria, or limitations which are specified in the AOC, including, but not limited to, this SOW. Pursuant to Paragraph 35 of the AOC, submissions approved by the U.S. Environmental Protection Agency (EPA) are an enforceable part of the AOC; consequently, cleanup goals and other substantive requirements, criteria, or limitations which are specified in EPA-approved submissions are Performance Standards. The EPA will use the Performance Standards to determine if the work, including, but not limited to, the RI/FS, has been completed. The Respondent shall ensure that the RI/FS is consistent with the EPA's "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988b, hereinafter "the RI/FS guidance") and other EPA guidance cited herein; unless, the RI/FS guidance or other guidance is inconsistent with the AOC as determined by the EPA, in which case the Respondent shall follow the AOC. If the EPA approves a schedule for any work pursuant to the AOC, the schedule shall supersede any timing requirements established in the RI/FS guidance or other guidance. Likewise, if the EPA, pursuant to the AOC, requires the Respondent to perform certain work at a point in time which is not consistent with the RI/FS guidance or other guidance, the Respondent shall perform the work. For example, on page B-2, the RI/FS guidance says that the Field Investigation is complete when the contractors or subcontractors are demobilized from the field; however, if the EPA, pursuant to the AOC, requires the Respondent to perform additional field investigation activities once the contractors or subcontractors have demobilized, the Respondent shall remobilize the contractors or subcontractors and perform the additional work. Except where it is inconsistent with this AOC, as determined by the EPA, the RI/FS guidance and the other EPA guidance cited herein are Performance Standards.

III. ROLE OF THE EPA

6. The EPA's approval of deliverables, including, but not limited to, submissions, is administrative in nature, and allows the Respondent to proceed to the next steps in implementing the Work of the RI/FS. The EPA's approval does not imply any warranty of performance, nor does it imply that the RI/FS, when completed, will meet Performance Standards nor does it imply that the RI/FS will function properly and be ultimately accepted by the EPA. The EPA retains the right to disapprove submissions during the RI/FS. The EPA may disapprove deliverables including, but not limited to, submissions concerning such matters as the contractor selection, plans and specifications, work plans, processes, sampling, analysis and any other deliverables within the context of the AOC. If a submission is unacceptable to the EPA, the EPA may require the Respondent to make modifications in the submission, and the EPA may require the Respondent to do additional work to support those modifications. That is, if a submission reports certain work that is unacceptable to the EPA, the EPA may require the Respondent to modify the submission text and to perform the work until it is acceptable to the EPA. The Respondent shall modify the submission and perform the work as required by the EPA.

IV. RESPONDENT'S KEY PERSONNEL

Respondent's Project Coordinator

7. When necessary, as determined by the EPA, the EPA will meet with the Respondent and discuss the performance and capabilities of the Respondent's Project Coordinator. When the Project Coordinator's performance is not satisfactory, as determined by the EPA, the Respondent shall take action, as requested by the EPA, to correct the deficiency. If, at any time, the EPA determines that the Project Coordinator is unacceptable for any reason, the Respondent, at the EPA's request, shall bar the Project Coordinator from any work under the AOC and give notice of the Respondent's selected new Project Coordinator to the EPA.

Respondent's Quality Assurance Official

8. Oversight, including, but not limited to confirmation sampling, by the Respondent's Quality Assurance Official (QAO) will be used to provide confirmation and assurance to the Respondent and to the EPA that the Respondent is performing the RI/FS in a manner that will meet the Performance Standards. The QAO shall ensure that the work performed by the Respondent meets the standards in the Quality Assurance Project Plan described in this SOW. The QAO shall selectively test and inspect the work performed by the Respondent.

V. TASKS TO BE PERFORMED AND DELIVERABLES

Conduct of the Remedial Investigation/Feasibility Study

9. This SOW specifies the Work to be performed and the deliverables which shall be produced by the Respondent pursuant to the AOC. The Respondent shall conduct the RI/FS in accordance with this SOW and all applicable guidance that the EPA uses in conducting RI/FS projects under CERCLA, as amended by SARA, as well as any additional requirements in the AOC. The Respondent shall furnish all necessary personnel, materials, and services necessary for, and incidental to, performance of the RI/FS, except as otherwise specified in the AOC.

Submittal of Deliverables

10. All draft and final deliverables specified in this SOW shall be provided in hard copy, by the Respondent, to the EPA (three copies), EPA's RI/FS Oversight Contractor (one copy), Texas Commission on Environmental Quality (two copies), and the Natural Resource Trustees¹ (one copy each). Draft and Final deliverables shall be provided in electronic format (specifically, WordPerfect® Version 9.0 [or higher] for Windows™ and Adobe® PDF format) to the EPA. Final deliverables shall be provided in hard copy and electronic format (specifically, Adobe® PDF format) to the Information Repository(ies) established for the Site. Additionally, all deliverables specified in this SOW shall be submitted, by the Respondent, according to the requirements of this SOW and Appendix A (Schedule of Deliverables/Meetings).

11. All deliverables shall be developed in accordance with the guidance documents listed in Appendix B² (Guidance Documents) to this SOW. If the EPA disapproves of or requires revisions to any of these deliverables, in whole or in part, the Respondent shall submit to the EPA, within thirty (30) calendar days of receiving the EPA's directions or comments, revised plans which are responsive to such directions or comments.

Tasks to be Performed by the Respondent

12. The Respondent shall perform each of the following Tasks (Tasks 1-10) as specified in this SOW. These Tasks shall be developed in accordance with the guidance documents listed in Appendix B (Guidance Documents) to this SOW and any additional guidance applicable to the RI/FS process.

Task 1: Project Planning

13. The purpose of Task 1 (Project Planning) is to determine how the RI/FS will be managed and controlled. The following activities shall be performed by the Respondent as part of Task 1:

- a) Attend Scoping Phase Meeting - The Respondent shall contact the EPA's Remedial Project Manager after the effective date of the AOC to schedule a scoping phase meeting. The scoping phase meeting shall occur within thirty (30) calendar days after the effective date of the AOC.

¹The Natural Resource Trustees for the Site have been preliminarily identified as the U.S. Department of the Interior, U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration, United States Geological Survey, Texas Commission on Environmental Quality, Texas Parks and Wildlife Department, and Texas General Land Office.

²Appendix B of this SOW does not include all guidance documents that are applicable to the RI/FS for the Site. The Respondent should consult with EPA's Remedial Project Manager for additional guidance and to ensure that these guidance documents have not been superseded.

Statement of Work for RI/FS, Star Lake Canal Superfund Site

b) **Evaluate Existing Information** - The Respondent shall compile and review all accessible existing Site data. The Respondent shall refer to Table 2-1 (Data Collection Information Sources) of the RI/FS Guidance for a list of data collection information sources, and the Respondent shall exhaust all of those sources in compiling the data.

The Respondent shall compile all existing information describing hazardous substance sources, migration pathways, and potential human and environmental receptors. The Respondent shall compile all existing data relating to the varieties and quantities of hazardous substances released on and near the Site. The Respondent shall compile and review all available data relating to past disposal practices of any kind on and near the Site. The Respondent shall compile existing data concerning the physical and chemical characteristics of the hazardous substances, and their distribution among the environmental media (ground water, soil, surface water, sediments, and air) on and near the Site.

The Respondent shall compile existing data which resulted from any previous sampling events that may have been conducted on and near the Site. The Respondent shall gather existing data which describes previous responses that have been conducted on and near the Site by local, state, federal, or private parties.

The Respondent shall gather existing information regarding geology, hydrogeology, hydrology, meteorology, and ecology of the Site. The Respondent shall gather existing data regarding background ground water, background soil, background surface water, background sediments, and background air characteristics. The Respondent shall gather existing data regarding demographics and land use. The Respondent shall gather existing data which identifies and locates residential, municipal, or industrial wells on and near the Site. The Respondent shall gather existing data which identifies surface water uses for areas surrounding the Site including, but not limited to, downstream of the Site. The Respondent shall gather existing information describing the flora and fauna of the Site. The Respondent shall gather existing data regarding threatened, endangered, or rare species, sensitive environmental areas, or critical habitats on and near the Site. The Respondent shall compile existing results from any previous biological testing to document any known ecological effect such as acute or chronic toxicity or bioaccumulation in the food chain.

The Respondent shall use data compiled and reviewed to describe additional data needed to characterize the Site, to better define potential applicable or relevant and appropriate requirements (ARARs), and to develop a range of preliminarily identified remedial alternatives.

Task 2: Remedial Investigation and Feasibility Study Work Plan

14. The Respondent shall prepare and submit a Draft RI/FS Work Plan within ninety (90) calendar days after the effective date of the AOC. The Respondent shall use information from appropriate EPA guidance and technical direction provided by the EPA's Remedial Project Manager as the basis for preparing the RI/FS Work Plan.
15. The Respondent shall develop the Draft RI/FS Work Plan (WP) in conjunction with the Draft RI/FS Sampling and Analysis Plan (Task 3 [RI/FS Sampling and Analysis Plan]) and the Draft RI/FS Site Health and Safety Plan (Task 4 [RI/FS Site Health and Safety Plan]), although each plan may be submitted to the EPA under separate cover. The Draft RI/FS WP shall include a comprehensive description of the Work to be performed, the methodologies to be utilized, and a corresponding schedule for completion. In addition, the Draft RI/FS WP shall include the rationale for performing the required activities.
16. Specifically, the Draft RI/FS WP shall present a statement of the problem(s) and potential problem(s) posed by the Site and the objectives of the RI/FS. Furthermore, the Draft RI/FS WP shall include a Site background summary setting forth the Site description which includes the geographic location of the Site, and to the extent possible, a description of the Site's physiography, hydrology, geology, and demographics; the Site's ecological, cultural and natural resource features; a synopsis of the Site history and a description of previous responses that have been conducted at the Site by local, state, federal, or private parties; and a summary of the existing data in terms of physical and chemical characteristics of the contaminants identified, and their distribution among the environmental media at the Site. In addition, the Draft RI/FS WP shall include a description of the Site management strategy developed during scoping, and a preliminary identification of remedial alternatives and data needs for evaluation of remedial alternatives. The Draft RI/FS WP shall reflect coordination with treatability study requirements (Task 8 [Treatability Studies]) and will show a process for and manner of identifying Federal and State chemical-, location-, and action-specific Applicable or Relevant and Appropriate Requirements (ARARs, Appendix C [Applicable or Relevant and Appropriate Requirements]).
17. Finally, the major part of the Draft RI/FS WP shall be a detailed description of the Tasks (Tasks 1-10) to be performed, information needed for each Task and for the Baseline Risk Assessments, information to be produced during and at the conclusion of each Task, and a description of the Work products and deliverables that the Respondent will submit to the EPA. This includes the deliverables set forth in the remainder of this SOW; a schedule for each of the required activities which is consistent with the EPA's guidance documents; a project management plan, including a data management plan (e.g., requirements for project management systems and software, minimum data requirements,

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data format and backup data management) and monthly reports to the EPA; and meetings and presentations to the EPA at the conclusion of each major phase of the RI/FS. The Respondent shall refer to the EPA's guidance document titled "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988b) which describes the RI/FS WP format and the required content.

18. The Respondent is responsible for fulfilling additional data and analysis needs identified by the EPA consistent with the general scope and objectives of this RI/FS. Because of the nature of the Site and the iterative nature of the RI/FS, additional data requirements and analyses may be identified throughout the process. If any significant additional Work is required to meet the objectives stated in the RI/FS WP, based upon new information obtained during the RI/FS, the Respondent shall submit a Draft RI/FS WP Amendment to the EPA for review and approval prior to any additional Work being conducted in accordance with the AOC. The EPA may, at its discretion, give verbal approval for Work to be conducted prior to providing written approval of the Draft RI/FS WP Amendment.
19. The Respondent shall prepare and submit to the EPA an Amended Draft RI/FS Work Plan within fifteen (15) calendar days after the receipt of the EPA's comments. A Final RI/FS Work Plan shall be submitted to the EPA within fifteen (15) calendar days after the receipt of the EPA's approval of the Amended Draft RI/FS Work Plan.

Task 3: RI/FS Sampling and Analysis Plan

20. The Respondent shall prepare a Draft RI/FS Sampling and Analysis Plan (SAP) within ninety (90) calendar days after the effective date of the AOC. This Draft RI/FS SAP shall provide a mechanism for planning field activities and shall consist of an RI/FS Field Sampling Plan and Quality Assurance Project Plan as follows:

a) RI/FS Field Sampling Plan (FSP)- The RI/FS FSP shall define in detail the sampling and data gathering methods that will be used for the project to define the nature and extent of contamination and ecological risk assessment-related studies (Task 7, Risk Assessments). It shall include, but not be limited to, sampling objectives, sample location and frequency, sampling equipment and procedures, and sample handling and analysis. The RI/FS FSP shall contain a completed Sample Design Collection Worksheet and a Method Selection Worksheet. These worksheet templates can be found in the EPA's guidance document titled "Guidance for Data Useability in Risk Assessment" (EPA 1992a). In addition, the FSP(s) shall include a comprehensive description of the Site including geology, location, and physiographic, hydrological, ecological, cultural, and natural resource features of the Site, a brief synopsis of the history of the Site, summary of existing data, and information on fate and transport and effects of chemicals. As such, the Respondent shall provide a strategy that includes both biased sampling and random sampling. The human health and ecological risk assessments require that the sampling be conducted to demonstrate that data is statistically representative of the Site. The

respondent shall also confirm that the detection limits for all laboratories are in accordance within the goals stated in the EPA's risk assessment guidance. The FSP shall consider the use of all existing data and shall justify the need for additional data whenever existing data will meet the same objective. The FSP shall be written so that a field sampling team unfamiliar with the Site would be able to gather the samples and field information required. The Respondent shall refer to EPA's guidance document titled "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988b) which describes the RI/FS FSP format and the required content.

b) RI/FS Quality Assurance Project Plan (QAPP) - The RI/FS QAPP shall describe the project objectives and organization, functional activities, and quality assurance and quality control (QA/QC) protocols that will be used to achieve the desired DQOs. The DQOs shall at a minimum reflect use of analytical methods for identifying contamination and remediating contamination consistent with the levels for remedial action objectives identified in the NCP. In addition, the RI/FS QAPP shall address sampling procedures; sample custody; analytical procedures; data reduction, validation, and reporting; and personnel qualifications. The Respondent shall refer to EPA's guidance document titled "EPA QA/R-5" (EPA 2001) which describes the RI/FS QAPP format and the required content.

The Respondent shall prepare and submit to the EPA an Amended Draft RI/FS SAP within fifteen (15) calendar days after the receipt of the EPA's comments. A Final RI/FS SAP shall be submitted to the EPA within fifteen (15) calendar days after the receipt of the EPA's approval of the Amended Draft RI/FS SAP.

21. The Respondent shall demonstrate in advance, to the EPA's satisfaction, that each analytical laboratory it may use is qualified to conduct the proposed Work. This includes use of methods and analytical protocols for the chemicals of concern in the media of interest within detection and quantification limits consistent with both QA/QC procedures and the DQOs approved in the RI/FS QAPP for the Site by the EPA. The laboratory must have, and follow, an approved QA program. If a laboratory not in the Contract Laboratory Program (CLP) is selected, methods consistent with CLP methods shall be used where appropriate. Any methods not consistent with CLP methods shall be approved by EPA prior to their use. Furthermore, if a laboratory not in the CLP program is selected, a laboratory QA program must be submitted to the EPA for review and approval. The EPA may require the Respondent to submit detailed information to demonstrate that the laboratory is qualified to conduct the Work, including information on personnel and qualifications, equipment, and material specifications.

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Task 4: RI/FS Site Health and Safety Plan

22. The Respondent shall prepare and submit to the EPA an RI/FS Site Health and Safety Plan (HSP) within ninety (90) calendar days after the effective date of this AOC. This RI/FS HSP shall be prepared in accordance with the Occupational Safety and Health Administration regulations and protocols. The EPA will review, but not approve, the RI/FS Site HSP to ensure that all necessary elements are included and that the plan provides for the protection of human health and the environment. The EPA may, at its discretion, disapprove the Site HSP and provide comments concerning those aspects of the plan which pertain to the protection of the environment and the health of persons not employed by, or under contract to, the Respondent. In addition, EPA may require a revised RI/FS Site HSP to be submitted for review in the event that the RI/FS WP is changed or amended (e.g., such as in the performance of pilot studies which may result in the airborne emissions of hazardous substances from the Site). The Respondent shall refer to the EPA's guidance document titled "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988b) which describes the RI/FS Site HSP format and the required content.

Task 5: Community Involvement Plan

23. The EPA shall prepare a Community Involvement Plan (CIP). This CIP shall outline the community involvement activities to be conducted during the RI/FS for the Site. This CIP may include, but not be limited to, the following elements: 1) the Site's background including location, description and history; 2) community overview including a community profile, concerns and involvement; 3) community involvement objectives and planned activities along with a schedule to accomplish those objectives; 4) mailing list of contacts and interested parties; 5) name and address of the information repositories and public meeting facility locations; 6) mailing list; 7) list of acronyms; and 8) a glossary. The Respondent will support the EPA's community relations efforts. Specifically, but not limited to, the Respondent shall provide representatives and audio-visual equipment for public meetings and open houses at the EPA's request. The Respondent shall assist the EPA in the preparation and mailing of fact sheets and meeting notices, and in the publication of public notices. All community relations activities conducted by the Respondent will be subject to oversight by the EPA.

Task 6: Site Characterization

24. As part of the Remedial Investigation (RI), the Respondent shall perform the activities described in this Task, including the preparation of a Preliminary Site Characterization Summary and a RI Report (Task 9 [Remedial Investigation Report]). The overall objective of the Site's characterization will be to describe areas of the Site that may pose a threat to human health or the environment. This will be accomplished by first determining the Site's physiography, geology, and hydrology. Surface and subsurface pathways of migration shall be defined by the Respondent. The Respondent shall identify the sources of contamination and define the nature, extent, and volume of the sources of contamination, including their physical and chemical

constituents. The Respondent shall also investigate the extent of migration of this contamination as well as its volume and any changes in its physical or chemical characteristics, to provide for a comprehensive understanding of the nature and extent of contamination at the Site. Using this information, contaminant fate and transport will then be determined and projected.

25. The Respondent shall implement the Final RI/FS WP, SAP, and the HSP during this phase of the RI/FS. Field data will be collected and analyzed to provide the information required to accomplish the objectives of the study. The Respondent shall notify the EPA at least fifteen (15) calendar days in advance of the field work regarding the planned dates for field activities, including, but not limited to, ecological field surveys, field layout of the sampling grid, installation of wells, initiating sampling (air, surface water, ground water, sediments, soils, and biota), installation and calibration of equipment, aquifer tests, and initiation of analysis and other field investigation activities (including geophysical surveys and borehole geophysics). The Respondent shall demonstrate that the laboratory and type of laboratory analyses that will be utilized during the Site's characterization meets the specific QA/QC requirements and the DQOs of the investigation of the Site as specified in the Final RI/FS SAP. Activities are often iterative, and to satisfy the objectives of the RI/FS it may be necessary for the Respondent to supplement the Work specified in the Final RI/FS WP.

26. The Respondent shall perform the following activities as part of Task 6 (Site Characterization):

a) Field Investigation - The field investigation shall include the gathering of data to define the Site's physical and biological characteristics, sources of contamination, and the nature and extent of contamination at the Site. These activities shall be performed by the Respondent in accordance with the Final RI/FS WP and SAP. At a minimum, this field investigation shall address the following:

i) Implementation and Documentation of Field Support Activities - The Respondent shall initiate field support activities following the Final RI/FS WP and SAP approved by the EPA. Field support activities may include obtaining access to the Site; scheduling; and procurement of equipment, office space, laboratory services, and/or contractors. The Respondent shall notify the EPA at least fifteen (15) calendar days prior to initiating field support activities so that the EPA may adequately schedule oversight activities. The Respondent shall also notify the EPA in writing upon completion of field support activities.

ii) Investigation and Definition of Site Physical and Biological Characteristics - The Respondent shall collect data on the physical and biological characteristics of the Site and its surrounding areas including the physiography, geology, hydrology, and specific physical characteristics identified in the Final RI/FS WP. This information shall be ascertained through a combination of physical measurements, observations, and sampling efforts, and will be utilized to define potential

transport pathways and human and ecological receptor populations (including risks to endangered or threatened species). In defining the Site's physical characteristics, the Respondent shall also obtain sufficient engineering data for the projection of contaminant fate and transport, and development and screening of remedial action alternatives, including information to assess treatment technologies.

iii) Definition of Sources of Contamination - The Respondent shall locate each source of contamination. For each location, the areal extent and depth of contamination will be determined by sampling at incremental depths on a sampling grid. The physical characteristics and chemical constituents and their concentrations will be determined for all known and discovered sources of contamination. The Respondent shall conduct sufficient sampling to define the boundaries of the contaminant sources to the level established in the Final RI/FS QAPP and DQOs. Defining the source of contamination shall include analyzing the potential for contaminant release (e.g., long-term leaching from soil), contaminant mobility and persistence, and characteristics important for evaluating remedial actions, including information to assess treatment technologies.

iv) Description of the Nature and Extent of Contamination - The Respondent shall gather information to describe the nature and extent of contamination as a final step during the field investigation. To describe the nature and extent of contamination, the Respondent shall utilize the information on the Site's physical and biological characteristics and sources of contamination to give a preliminary estimate of the contaminants that may have migrated. The Respondent shall then implement an iterative monitoring program and any study program identified in the Final RI/FS WP or SAP such that by using analytical techniques sufficient to detect and quantify the concentration of contaminants, the migration of contaminants through the various media at the Site can be determined. In addition, the Respondent shall gather data for calculations of contaminant fate and transport. This process shall be continued until the area and depth of contamination are known to the level of contamination established in the Final RI/FS QAPP and DQOs. The EPA will use the information on the nature and extent of contamination to determine the level of risk presented by the Site and to help determine aspects of the appropriate remedial action alternatives to be evaluated.

b) Data Analyses - The Respondent shall analyze the data collected and develop or refine the Conceptual Site Model by presenting and analyzing data on source characteristics, the nature and extent of contamination, the transport pathways and fate of the contaminants present at the Site, and the effects on human health and the environment:

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i) **Evaluation of Site Characteristics** - The Respondent shall analyze and evaluate the data to describe the Site's physical and biological characteristics, contaminant source characteristics, nature and extent of contamination, and contaminant fate and transport. Results of the Site's physical characteristics, source characteristics, and extent of contamination analyses are utilized in the analysis of contaminant fate and transport. The evaluation will include the actual and potential magnitude of releases from the sources, and horizontal and vertical spread of contamination as well as the mobility and persistence of the contaminants. Where modeling is appropriate, such models shall be identified by, the Respondent, to the EPA in a Technical Memorandum prior to their use.

All data and programming, including any proprietary programs, shall be made available to the EPA together with a sensitivity analysis. The RI data shall be presented in a format to facilitate the Respondent's preparation of the Baseline Human Health and Ecological Risk Assessments (Task 7 [Risk Assessments]). All data shall be archived in a database in a such a format that would be accessible to investigators as needed.

The Respondent shall agree to discuss and then collect any data gaps identified by the EPA that are needed to complete the risk assessments. Also, this evaluation shall provide any information relevant to the Site's characteristics necessary for evaluation of the need for remedial action in the risk assessments and for the development and evaluation of remedial alternatives. Analyses of data collected for the Site's characterization shall meet the DQOs developed in the Final RI/FS QAPP and stated in the Final RI/FS SAP (or revised during the RI).

c) **Data Management Procedures** - The Respondent shall consistently document the quality and validity of field and laboratory data compiled during the RI as follows:

i) **Documentation of Field Activities** - Information gathered during the Site's characterization shall be consistently documented and adequately recorded by the Respondent in well maintained field logs and laboratory reports. The method(s) of documentation shall be specified in the Final RI/FS WP and/or the SAP. Field logs shall be utilized to document observations, measurements, and significant events that have occurred during field activities. Laboratory reports shall document sample custody, analytical responsibility and results, adherence to prescribed protocols, nonconformity events, corrective measures, and data deficiencies.

ii) Sample Management and Tracking - The Respondent shall maintain field reports, sample shipment records, analytical results, and QA/QC reports to ensure that only validated analytical data are reported and utilized in the risk assessments and the development and evaluation of remedial alternatives. Analytical results developed under the Final RI/FS WP shall not be included in any characterization reports of the Site unless accompanied by or cross-referenced to a corresponding QA/QC report. In addition, the Respondent shall establish a data security system to safeguard chain-of-custody forms and other project records to prevent loss, damage, or alteration of project documentation.

d) Site Characterization Deliverables - The Respondent shall prepare the Preliminary Site Characterization Summary Report as follows:

i) Preliminary Site Characterization Summary Report- After completing the field sampling and analysis and as specified in the project schedule in the Final RI/FS WP, the Respondent shall submit a concise Draft Preliminary Site Characterization Summary Report (PSCSR) to the EPA for review and approval. This report shall review the investigative activities that have taken place, and describe and display the Site's data documenting the location and characteristics of surface and subsurface features and contamination at the Site including the affected medium, location, types, physical state, and concentration and quantity of contaminants. In addition, the location, dimensions, physical condition, and varying concentrations of each contaminant throughout each source, and the extent of contaminant migration through each of the affected media shall be documented.

The Draft PSCSR shall provide the EPA and the Respondent with a preliminary reference for developing the Baseline Human Health and Ecological Risk Assessments, evaluating the development and screening of remedial alternatives, and the refinement and identification of ARARs. The Respondent shall submit to the EPA an Amended Draft PSCSR within fifteen (15) calendar days from the receipt of the EPA's comments. A Final PSCSR shall be submitted to the EPA within fifteen (15) calendar days after the EPA's approval of the Amended Draft PSCSR.

Task 7: Risk Assessments

27. The Respondent shall perform a Baseline Human Health Risk Assessment, Screening Level Ecological Risk Assessment, and a Baseline Ecological Risk Assessment (if necessary) for the Site, which will be a part of the RI Report. The Respondent will prepare one section of the Final RI/FS WP (Task 2) which discusses the risk assessment

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process and outlines the steps necessary for coordinating with the EPA at key decision points within the process. Submittal of deliverables, meetings and/or conference calls, and presentations to the EPA will be reflected in the project schedule in the Final RI/FS WP to demonstrate the progress made on the risk assessments. The DQOs listed within the Final RI/FS QAPP will include DQOs specific to risk assessment needs, and critical samples needed for the risk assessments will be so identified within the Final RI/FS SAP. The Respondent shall develop an initial Conceptual Site Model which may be revised as new information is obtained. These risk assessments shall consist of both Human Health and Ecological Risk Assessments as follows:

a) **Baseline Human Health Risk Assessment** - The Respondent shall perform a Baseline Human Health Risk Assessment (BHHRA) to evaluate and assess the risk to human health posed by the contaminants present at the Site. The Respondent shall refer to the appropriate EPA's guidance documents (EPA 1989b, 1991a, 1991b, 1991c, and 1992a) in conducting the BHHRA. The Respondent shall address the following in the BHHRA:

i) **Hazard Identification (sources)** - The Respondent shall review available information on the hazardous substances present at the Site and identify the major contaminants of concern.

ii) **Dose-Response Assessment** - The Respondent, with concurrence from the EPA, shall select contaminants of concern based on their intrinsic toxicological properties.

iii) **Conceptual Exposure/Pathway Analysis** - The Respondent shall identify and analyze critical exposure pathways (e.g., drinking water). The proximity of contaminants to exposure pathways and their potential to migrate into critical exposure pathways shall be assessed.

iv) **Characterization of Site and Potential Receptors** - The Respondent shall identify and characterize human populations in the exposure pathways.

v) **Exposure Assessment** - During the exposure assessment, the Respondent shall identify the magnitude of actual or potential human exposures, the frequency and duration of these exposures, and the routes by which receptors are exposed. The exposure assessment shall include an evaluation of the likelihood of such exposures occurring and shall provide the basis for the development of acceptable exposure levels. In developing the exposure assessment, the Respondent shall develop reasonable maximum estimates of exposure for both current land use conditions and potential future land use conditions at the Site.

vi) **Risk Characterization** - During risk characterization, the Respondent shall

compare chemical-specific toxicity information, combined with quantitative and qualitative information from the exposure assessment, to measured levels of contaminant exposure levels and the levels predicted through environmental fate and transport modeling. These comparisons shall determine whether concentrations of contaminants at or near the Site are affecting or could potentially affect human health.

vii) **Identification of Limitations/Uncertainties** - The Respondent shall identify critical assumptions (e.g., background concentrations and conditions) and uncertainties in the BHHRA.

viii) **Conceptual Site Model** - Based on contaminant identification, exposure assessment, toxicity assessment, and risk characterization, the Respondent shall develop a Conceptual Site Model for the Site.

The Respondent shall prepare and submit to the EPA for review and approval, according to the schedule specified in the Final RI/FS Work Plan, a Draft BHHRA. The Respondent shall submit an Amended Draft BHHRA within fifteen (15) calendar days of the receipt of the EPA's comments. The Respondent shall submit a Final BHHRA within fifteen (15) calendar days after the receipt of the EPA's approval of the Amended Draft BHHRA.

b) The Baseline Ecological Risk Assessment (BERA) shall be performed concurrently with the BHHRA. The BERA shall conform to current EPA guidance, including but not limited to EPA 1989b, EPA 1992a, EPA 1992b, and EPA 1993. The scoping of all phases of the BERA shall follow the general approach provided in EPA 1992b and shall include discussions between the Respondents and the EPA's risk assessors and risk managers. The BERA shall conform to the general outline provided in EPA 1997.

There are eight steps in the Baseline Ecological Risk Assessment (BERA) process include: Step 1 - Screening-Level Problem Formulation and Ecological Effects Evaluation, Step 2 - Screening-Level Preliminary Exposure Estimate and Risk Calculation, Step 3 - Baseline Risk Assessment Problem Formulation, Step 4 - Study Design and Data Quality Objectives, Step 5 - Field Verification and Sampling Design, Step 6 - Site Investigation and Analysis of Exposure and Effects, Step 7 - Risk Characterization, and Step 8 - Risk Management. The Respondent shall perform the BERA in accordance with the appropriate EPA's guidance documents (EPA 1992a, 1997, and 1998a). The Respondent shall interact closely with the EPA's Remedial Project Manager and risk assessment staff assigned to the Site to ensure that draft deliverables are acceptable and major rework is avoided on subsequent submittals. The scope of the BERA will be determined via a phased approach as outlined in the EPA's guidance documents and documented in the following deliverables:

i) Step 1, Screening Level Problem Formulation and Ecological Effects Evaluation - The "Screening Level Problem Formulation and Ecological Effects Evaluation" step is part of the initial ecological risk screening assessment. For this initial step, it is likely that site-specific information for determining the nature and extent of contamination and for characterizing ecological receptors at the Site is limited. This step includes all the functions of problem formulation (Steps 3 and 4) and ecological effects analysis, but on a screening level. The results of this step will be used in conjunction with exposure estimates during the preliminary risk calculation in Step 2 (Screening-Level Preliminary Exposure Estimate and Risk Calculation).

For the screening level problem formulation, the Respondent shall develop a Conceptual Site Model that addresses these five issues: 1) environmental setting and contaminants known or suspected to exist at the Site, 2) contaminant fate and transport mechanisms that might exist at the Site, 3) the mechanisms of ecotoxicity associated with contaminants and likely categories of receptors that could be affected, 4) the complete exposure pathways that might exist at the Site, and 5) selection of endpoints to screen for ecological risk.

The next step in the initial ecological risk screening assessment will be the preliminary ecological effects evaluation and the establishment of contaminant exposure levels that represent conservative thresholds for adverse ecological effects. Screening ecotoxicity values shall represent a no-observed-adverse-effect-level for long-term exposures to a contaminant. Ecological effects of most concern are those that can impact populations (or higher levels of biological organizations) and include adverse effects on development, reproduction, and survivorship. For some of the data reported in the literature, conversions may be necessary to allow the data to be used for measures of exposure other than those reported. The Respondent shall consult with the EPA's Remedial Project Manager and risk assessors concerning any extrapolations used in developing screening ecotoxicity values.

ii) Step 2, Screening-Level Exposure Estimate and Risk Calculation - The "Screening-Level Exposure Estimate and Risk Calculation" comprises the second step in the ecological risk screening assessment for the Site. Risk is estimated by comparing maximum documented exposure concentrations with the ecotoxicity screening values from Step 1. At the conclusion of Step 2, the Respondent shall decide, with concurrence from the EPA, that either the screening-level ecological risk assessment is adequate to determine that ecological threats are negligible, or the process should continue to a more detailed ecological risk assessment (Steps 3 through 7). If the process continues, the screening-level assessment serves to

identify exposure pathways and preliminary contaminants of concern for the BERA by eliminating those contaminants and exposure pathways that pose negligible risks.

To estimate exposures for the screening-level ecological risk calculation, on-site contaminant levels and general information on the types of biological receptors that might be exposed should be known from Step 1. Only complete exposure pathways should be evaluated and the highest measured or estimated on-site contaminant concentration for each environmental medium should be used to estimate exposures, thereby ensuring that potential ecological threats are not missed.

The Respondent will estimate a quantitative screening-level risk using the exposure estimates developed according to Step 2 and the screening ecotoxicity values developed according to Step 1. For the screening-level risk calculation, the hazard quotient approach, which compares point estimates of screening ecotoxicity values and exposure values, is adequate to estimate risk.

At the end of Step 2, the Respondent shall decide, with concurrence from the EPA, whether the information available is adequate to support a risk management decision. The three possible decisions at this point will be: 1) There is adequate information to conclude that ecological risks are negligible and therefore no need for remediation on the basis of ecological risk; 2) The information is not adequate to make a decision at this point, and the ecological risk assessment process will continue to Step 3; or 3) The information indicates a potential for adverse ecological effects, and a more thorough assessment is warranted. The Respondent shall document the decision and the basis for it in a Draft Screening Level Ecological Risk Assessment (SLERA) Report and submit it to the EPA for review and approval according to the project schedule in the Final RI/FS WP. The Respondent shall submit an Amended Draft SLERA within fifteen (15) calendar days of the receipt of the EPA's comments. The Respondent shall submit a Final SLERA within fifteen (15) calendar days of the EPA's approval of the Amended Draft SLERA.

iii) Step 3, Baseline Risk Assessment Problem Formulation - The "Baseline Risk Assessment Problem Formulation" step of the BERA will refine the screening-level problem formulation and expands on the ecological issues that are of concern at the Site. In the screening-level assessment, conservative assumptions are used where site-specific information is lacking. In Step 3, the results of the screening assessment and additional site-specific information are used to determine the scope and goals of the BERA. Steps 3 through 7 will be required only if the screening-level assessment, in Steps 1 and 2, indicated a need for further ecological risk evaluation.

Problem formulation at Step 3 will include the following activities: a) refining preliminary contaminants of ecological concern; b) further characterizing ecological effects of contaminants; c) reviewing and refining information on contaminant fate and transport, complete exposure pathways, and ecosystems potentially at risk; d) selecting assessment endpoints; and e) developing a Conceptual Site Model (CSM) with working hypotheses or questions that the Site investigation will address.

At the conclusion of Step 3, the Respondent shall submit a Draft BERA Problem Formulation (PF) Report to the EPA for review and approval according to the project schedule in the Final RI/FS Work Plan. The Respondent shall submit an Amended Draft BERA PF Report within fifteen (15) calendar days of the receipt of the EPA's comments. The Respondent shall submit a Final BERA PF Report within fifteen (15) calendar days of the receipt of the EPA's approval of the Amended Draft BERA PF Report. This report shall discuss the assessment endpoints, exposure pathways, risk questions, and the CSM integrating these components. The products of Step 3 will be used to select measurement endpoints and to develop the BERA Work Plan (WP) and Sampling and Analysis (SAP) for the Site in Step 4.

iv) Step 4, Study Design and Data Quality Objective Process - The "Study Design and Data Quality Objective Process" step of the BERA will establish the measurement endpoints which complete the CSM in Step 3. The CSM will then be used to develop the study design and DQOs. The deliverables of Step 4 will be the BERA WP and SAP, which describe the details of the Site's investigation as well as the data analysis methods and DQOs. The Draft BERA WP shall describe the assessment endpoints, exposure pathways, questions and testable hypotheses, measurement endpoints and their relation to assessment endpoints, and uncertainties and assumptions. The Draft BERA SAP shall describe data needs; scientifically valid and sufficient study design and data analysis procedures; study methodology and protocols, including sampling techniques; data reduction and interpretation techniques, including statistical analyses; and quality assurance procedures and quality control techniques. The Respondent shall submit to the EPA for review and approval a Draft BERA WP and SAP according to the schedule specified in the Final RI/FS Work Plan. The Respondent shall submit an Amended Draft BERA WP and SAP within fifteen (15) calendar days of the receipt of the EPA's comments. The Respondent shall submit a Final BERA WP and SAP within fifteen (15) calendar days of the receipt of the EPA's approval of the Amended Draft BERA WP and SAP.

v) Step 5, Field Verification of Sampling Design - The "Field Verification of Sampling Design" step of the BERA process will ensure that the DQOs for the Site can be met. This step verifies that the selected assessment endpoints, testable hypotheses, exposure pathway model, measurement endpoints, and study design from Steps 3 and 4 are appropriate and implementable at the Site. Step 6 of the BERA process cannot begin until the Final BERA WP and SAP are approved by the EPA.

vi) Step 6, Site Investigation and Analysis Phase - The "Site Investigation and Analysis Phase" of the BERA process shall follow the Final BERA WP and SAP developed in Step 4 and verified in Step 5. The Step 6 results are then used to characterize ecological risks in Step 7.

The Final BERA WP for the Site investigation will be based on the CSM and will specify the assessment endpoints, risk questions, and testable hypotheses. During the Site investigation, the Respondent shall adhere to the DQOs and to any requirements for co-located sampling. The analysis phase of the BERA process will consist of the technical evaluation of data on existing and potential exposures and ecological effects at the Site. This analysis will be based on the information collected during Steps 1 through 5 and will include additional assumptions or models to interpret the data in the context of the CSM. Changing field conditions and new information on the nature and extent of contamination may require a change to the Final BERA SAP.

vii) Step 7 - Risk Characterization - The "Risk Characterization" step is considered the final phase of the BERA process and will include two major components: risk estimation and risk description. Risk estimation will consist of integrating the exposure profiles with the exposure-effects information and summarizing the associated uncertainties. The risk description will provide information important for interpreting the risk results and will identify a threshold for adverse effects on the assessment endpoints. At the end of Step 7, the Respondent shall submit a Draft BERA Report to EPA for review and approval according to the project schedule in the Final RI/FS WP. The Respondent shall submit an Amended Draft BERA Report within fifteen (15) calendar days of the receipt of the EPA's comments. The Respondent shall submit a Final BERA Report within fifteen (15) calendar days of the receipt of the EPA's approval of the Amended Draft BERA Report.

viii) Step 8 - Risk Management - "Risk Management" at the Site will be the responsibility of the EPA's Remedial Project Manager, who must balance risk reductions associated with cleanup of contaminants with potential impacts of the remedial actions themselves. In Step 7, a threshold for effects on the assessment endpoint as a range between contamination levels identified as posing no ecological risk and the lowest contamination levels identified as likely to produce adverse ecological effects will be identified. In Step 8, the EPA's Remedial Project Manager will evaluate several factors in deciding whether or not to clean up to within that range. This risk management decision will be finalized by the EPA in the Record of Decision for the Site.

Task 8: Treatability Studies

28. Treatability testing shall be performed by the Respondent to assist in the detailed analysis of alternatives. In addition, if applicable, testing results and operating conditions shall be used in the detailed design of the selected remedial technology. The following activities shall be performed by the Respondent:

a) Determination of Candidate Technologies and of the Need for Testing - The Respondent shall identify in a Candidate Technologies Technical Memorandum (CTTM) the candidate technologies for a treatability studies program. The Respondent shall submit a Draft CTTM to the EPA for review and approval according to the project schedule specified in the Final RI/FS WP. The Respondent shall submit an Amended Draft CTTM within fifteen (15) calendar days of the receipt of the EPA's comments. The Respondent shall submit a Final CTTM within fifteen (15) calendar days of the receipt of the EPA's approval of the Amended Draft CTTM.

The listing of candidate technologies will cover the range of technologies required for alternatives analysis. The specific data requirements for the testing program will be determined and refined during the characterization of the Site and the development and screening of remedial alternatives. The Respondent shall perform the following activities:

i) Conduct of Literature Survey and Determination of the Need for Treatability Testing - The Respondent shall conduct a literature survey to gather information on performance, relative costs, applicability, removal efficiencies, operation and maintenance requirements, and implementability of candidate technologies. If practical technologies have not been sufficiently demonstrated, or cannot be adequately evaluated for this Site on the basis of available information, treatability testing may need to be conducted. Where it is determined by the EPA that treatability testing is required, and unless the Respondent can demonstrate to the

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EPA's satisfaction that they are not needed, the Respondent shall be required to submit a Treatability Study Work Plan to the EPA outlining the steps and data necessary to evaluate and initiate the treatability testing program.

ii) Evaluation of Treatability Studies - Once a decision has been made to perform treatability studies, the Respondent and the EPA will decide on the type of treatability testing to use (e.g., bench versus pilot). Because of the time required to design, fabricate, and install pilot scale equipment as well as perform testing for various operating conditions, the decision to perform pilot testing shall be made as early in the process as possible to minimize potential delays of the Feasibility Study (Task 10). The Respondent shall submit a Draft Treatability Study Work Plan (TSWP), Sampling and Analysis Plan (SAP), and Health and Safety Plan within forty-five (45) calendar days after the receipt of the notice from the EPA that treatability studies are required. The Respondent shall submit an Amended Draft TSWP, SAP, and HSP within fifteen (15) calendar days of the receipt of the EPA's comments. The Respondent shall submit a Final TSWP, SAP, and HSP within fifteen (15) calendar days of the receipt of the EPA's approval of the Amended Draft TSWP, SAP, and HSP. The EPA will not approve the TS HSP but may provide comments to the Respondent. The Respondent shall submit a Draft Treatability Study (TS) Report to the EPA for review and approval according to the project schedule in the Final Treatability Study Work Plan. The Respondent shall submit an Amended Draft TS Report within fifteen (15) calendar days of the receipt of the EPA's comments. The Respondent shall submit a Final TS Report within fifteen (15) calendar days of the receipt of the EPA's approval of the Amended Draft TS Report. This report shall evaluate the technology's effectiveness and implementability in relation to the Preliminary Remediation Goals established for the Site. Actual results must be compared with predicted results to justify effectiveness and implementability discussions.

Task 9: Remedial Investigation Report

29. The Respondent shall prepare and submit a Remedial Investigation (RI) Report. The Respondent shall refer to the EPA's guidance document titled "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988b) and shall specifically follow Table 3-13 (Suggested RI Report Format) for the RI Report format and the required content. The information shall include a summary of the results of the field activities to characterize the Site, classification of ground water beneath the Site, nature and extent of contamination, and appropriate site-specific discussions for fate and transport of contaminants. The Respondent shall incorporate the results of Task 7 (Risk Assessments) into the RI Report. The Respondent shall submit a Draft RI Report to the EPA for review and approval according to the project schedule in the Final RI/FS Work Plan. The Respondent shall submit an Amended Draft RI Report within fifteen (15) calendar days of the receipt of the EPA's comments. The Respondent shall submit a Final RI Report within fifteen (15) calendar days of

the receipt of the EPA's approval of the Amended Draft RI Report.

Task 10: Feasibility Study

30. The Respondent shall perform a Feasibility Study (FS) as specified in this SOW. The FS shall include, but not be limited to, the Development and Screening of Alternatives for Remedial Action, a Detailed Analysis of Alternatives for Remedial Action, submittal of Draft and Final FS Reports, and other reports/memoranda as follows:

a) Development and Screening of Alternatives for Remedial Action - The Respondent shall develop an appropriate range of remedial alternatives that will be evaluated through development and screening. The Respondent shall submit a Draft Alternative Development and Screening Memorandum (ADSM) to the EPA for review and approval according the project schedule in the Final RI/FS Work Plan. The Draft ADSM shall summarize the assembled alternatives for each affected medium and the chemical-, location-, and action-specific ARARs for each of the considered alternatives. The reasons for eliminating alternatives during the preliminary screening process shall be specified. The ADSM shall summarize the results of the screening process in relation to the Remedial Action Objectives and the more specific Preliminary Remediation Goals for the Site. The Respondent shall submit an Amended Draft ADSM within fifteen (15) calendar days of the receipt of the EPA's comments. The Respondent shall submit a Final ADSM within fifteen (15) calendar days of the receipt of the EPA's approval of the Amended Draft ADSM.

b) Detailed Analyses of Alternatives for Remedial Action - The Respondent shall conduct a detailed analysis of remedial alternatives for the candidate remedies identified during the screening process described in this Task. This detailed analysis shall follow the EPA's guidance document titled "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988b) and other appropriate guidance documents. The major components of the Detailed Analysis of Alternatives for Remedial Action shall consist of an analysis of each option against a set of evaluation criteria and a separate discussion for the comparative analysis of all options with respect to each other in a manner consistent with the NCP. The Respondent shall not consider state and community acceptance during the Detailed Analysis of Alternatives. The EPA will perform the analysis of these two criteria. At the conclusion of the Detailed Analysis of Alternatives and within the time frame specified in the project schedule in the Final RI/FS WP, the Respondent shall provide the EPA with a Draft FS Report as outlined below. The analysis of remedial alternatives shall consist of the following deliverables:

i) **Nine Criteria Analysis Memorandum** - The Respondent shall submit to the EPA a Draft Nine Criteria Analysis Memorandum (NCAM), summarizing the results of the nine criteria evaluation, according to the project schedule in the Final RI/FS WP. The evaluation criteria will include: overall protection of human health and the environment; compliance with ARARs; long-term effectiveness and permanence; reduction of toxicity, mobility, or volume; short-term effectiveness; implementability; cost; state acceptance; and community acceptance. The Respondent shall submit an Amended Draft NCAM within fifteen (15) calendar days of the receipt of the EPA's comments. The Respondent shall submit a Final NCAM within fifteen (15) calendar days of the receipt of the EPA's approval of the Final NCAM.

ii) **Remedial Alternatives Comparative Analysis Report** - The Respondent shall submit a Remedial Alternatives Comparative Analysis (RACA) Report, which summarizes the results of the comparative analysis of the remedial alternatives, according the project schedule in the Final RI/FS WP. The Respondent shall submit an Amended Draft RACA Report within fifteen (15) calendar days after the receipt of the EPA's comments. The Respondent shall submit a Final RACA Report within fifteen (15) calendar days after the receipt of the EPA's approval of the Amended Draft RACA Report.

iii) **Presentation to EPA** - The Respondent shall conduct a presentation to the EPA according the project schedule in the Final RI/FS WP; at which the Respondent shall present and discuss the findings of the RI, Remedial Action Objectives, alternatives evaluated in the FS, and the comparative analysis.

iv) **Draft Feasibility Study Report** - The Respondent shall submit to the EPA, for review and approval, a Draft FS Report which documents the activities conducted during the Development and Screening of Alternatives and the Detailed Analyses of Alternatives, as described above, according to the project schedule in the Final RI/FS WP. The Respondent shall refer to the EPA's guidance document titled "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988b), specifically Table 6-5 (Suggested FS Report Format) for FS Report content and format. The Respondent shall submit an Amended Draft FS Report within fifteen (15) calendar days of the receipt of the EPA's comments.

- c) Final Feasibility Study Report - The Draft FS Report shall provide the basis for the Proposed Plan developed by the EPA under CERCLA and shall document the development and analysis of remedial alternatives. The Draft FS Report may be subject to change following comments received during the public comment period on the EPA's Proposed Plan. The EPA will forward any comments pertinent to the content of the Draft FS Report to the Respondent. The Respondent shall submit a Final FS Report within fifteen (15) calendar days of the receipt of these comments.

APPENDIX A
SCHEDULE OF DELIVERABLES/MEETINGS
STATEMENT OF WORK
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
STAR LAKE CANAL SUPERFUND SITE

DELIVERABLES/MEETINGS	DUE DATES (CALENDAR DAYS)
1. Scoping Phase Meeting	Meeting to occur within thirty (30) days after the effective date of the AOC.
2. Draft, Amended Draft, and Final RI/FS Work Plan	Draft due within ninety (90) days after the effective date of the AOC. Amended Draft due within fifteen (15) days after the receipt of the EPA's comments. Final due within fifteen (15) days of the receipt of the EPA's approval of the Amended Draft RI/FS WP.
3. Draft, Amended Draft, and Final RI/FS Sampling and Analysis Plan	Draft due within ninety (90) days after the effective date of the AOC. Amended Draft due within fifteen (15) days after the receipt of the EPA's comments. Final due within fifteen (15) days of the receipt of the EPA's approval of the Amended Draft RI/FS SAP.
4. RI/FS Site Health and Safety Plan	Plan due within ninety (90) days after the effective date of the AOC.
5. Draft, Amended Draft, and Final Preliminary Site Characterization Summary Report	Draft due as specified in the Final RI/FS Work Plan. Amended Draft due within fifteen (15) days of the receipt of the EPA's comments. Final due within fifteen (15) days of the receipt of the EPA's approval of the Amended Draft RI/FS PSCSR.
6. Draft, Amended Draft, and Final Baseline Human Health Risk Assessment	Draft due as specified in the Final RI/FS Work Plan. Amended Draft due within fifteen (15) days of the receipt of the EPA's comments. Final due within fifteen (15) days of the receipt of the EPA's approval of the Amended Draft RI/FS BHHRA.
7. Draft, Amended Draft, and Final Screening Level Ecological Risk Assessment Report	Draft due as specified in the Final RI/FS Work Plan. Amended Draft due within fifteen (15) days of the receipt of the EPA's comments. Final due within fifteen (15) days of the receipt of the EPA's approval of the Amended Draft SLERA Report.

APPENDIX A (CONTD.)
SCHEDULE OF DELIVERABLES/MEETINGS
STATEMENT OF WORK
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
STAR LAKE CANAL SUPERFUND SITE

DELIVERABLE	DUE DATE (CALENDAR DAYS)
8. Draft, Amended Draft, and Final Baseline Ecological Risk Assessment Problem Formulation Report	Draft due as specified in the Final RI/FS Work Plan. Amended Draft due within fifteen (15) days of the receipt of the EPA's comments. Final due within fifteen (15) days of the receipt of the EPA's approval of the Amended Draft BERAPF Report.
9. Draft, Amended Draft, and Final Baseline Ecological Risk Assessment Work Plan and Sampling and Analysis Plan	Draft due as specified in the Final RI/FS Work Plan. Amended Draft due within fifteen (15) days of the receipt of the EPA's comments. Final due within fifteen (15) days of the receipt of the EPA's approval of the Amended Draft BERA WP and SAP.
10. Draft, Amended Draft, and Final Baseline Ecological Risk Assessment Report	Draft due as specified in the Final RI/FS Work Plan. Amended Draft due within fifteen (15) days of the receipt of the EPA's comments. Final due within fifteen (15) days of the receipt of the EPA's approval of the Amended Draft BERA Report.
11. Draft, Amended Draft, and Final Candidate Technologies Technical Memorandum	Draft due as specified in the Final RI/FS Work Plan. Amended Draft due within fifteen (15) days of the receipt of the EPA's comments. Final due within fifteen (15) days of the receipt of the EPA's approval of the Amended Draft CTTM.
12. Draft, Amended Draft, and Final Treatability Study Work Plan, Sampling and Analysis Plan, and Health and Safety Plan	Draft due within forty-five (45) days of the receipt of EPA's notice that treatability studies are required. Amended Draft due within fifteen (15) days of the receipt of the EPA's comments. Final due within fifteen (15) days of the receipt of the EPA's approval of the Amended Draft TSWP and SAP.
13. Draft, Amended Draft, and Final Treatability Study Report	Draft due as specified in the Final Treatability Study Work Plan. Amended Draft due within fifteen (15) days of the receipt of the EPA's comments. Final due within fifteen (15) days of the receipt of the EPA's approval of the Amended Draft TS Report.
14. Draft, Amended Draft, and Final Remedial Investigation Report	Draft due as specified in the Final RI/FS Work Plan. Amended Draft due within fifteen (15) days of the receipt of the EPA's comments. Final due within fifteen (15) days of the receipt of the EPA's approval of the Amended Draft RI Report.

APPENDIX A (CONTD.)
SCHEDULE OF DELIVERABLES/MEETINGS
STATEMENT OF WORK
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
STAR LAKE CANAL SUPERFUND SITE

DELIVERABLE	DUE DATE (CALENDAR DAYS)
15. Draft, Amended Draft, and Final Alternative Development and Screening Memorandum	Draft due as specified in the Final RI/FS Work Plan. Amended Draft due within fifteen (15) days of the receipt of the EPA's comments. Final due within fifteen (15) days of the receipt of the EPA's approval of the Amended Draft ADSM.
16. Draft, Amended Draft, and Final Nine Criteria Analysis Memorandum	Draft due as specified in the Final RI/FS Work Plan. Amended Draft due within fifteen (15) days of the receipt of the EPA's comments. Final due within fifteen (15) days of the receipt of the EPA's approval of the Amended Draft NCAM.
17. Draft, Amended Draft, and Final Remedial Alternatives Comparative Analysis Report	Draft due as specified in the Final RI/FS Work Plan. Amended Draft due within fifteen (15) days of the receipt of the EPA's comments. Final due within fifteen (15) days of the receipt of the EPA's approval of the Amended Draft RACA Report.
18. Presentation to the EPA.	Presentation due as specified in the Final RI/FS Work Plan.
19. Draft, Amended Draft, and Final Feasibility Study Report	Draft due as specified in the Final RI/FS Work Plan. Amended Draft due within fifteen (15) days of the receipt of the EPA's comments. Final due within fifteen (15) days of the receipt of the EPA's comments.
20. Monthly Progress Reports	Initially due as specified in the RI/FS Work Plan. Thereafter, due by the tenth day of the following month.

APPENDIX B
GUIDANCE DOCUMENTS
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
STAR LAKE CANAL SUPERFUND SITE

The following list comprises some of the guidance documents that are applicable to the Remedial Investigation/Feasibility Study process. The Respondent should consult with EPA's Remedial Project Manager for additional guidance and to ensure that the following guidance documents have not been superseded:

U.S. Environmental Protection Agency (EPA) 1987a. "Data Quality Objectives for Remedial Response Activities." Office of Emergency and Remedial Response and Office of Waste Programs Enforcement. EPA/540/G-87/003. OSWER Directive No. 9335.0-7b. March 1987.

EPA 1987b. "Interim Guidance on Compliance with Applicable or Relevant and Appropriate Requirements." Office of Emergency and Remedial Response. OSWER Directive No. 9234.0-05. July 9, 1987.

EPA 1988a. "CERCLA Compliance with Other Laws Manual." Office of Emergency and Remedial Response. OSWER Directive No. 9234.1-01. August 1988.

EPA 1988b. "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA." Office of Emergency and Remedial Response. EPA/540/G-89/004. OSWER Directive No. 9355.3-01. October 1988.

EPA 1989a. "CERCLA Compliance with Other Laws Manual: Part II. Clean Air Act and Other Environmental Statutes and State Requirements." Office of Emergency and Remedial Response. OSWER Directive No. 9234.1-02. August 1989.

EPA 1989b. "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A)." Office of Emergency and Remedial Response. EPA/540/1-89/002. OSWER Directive No. 9285.7-01A. December 1989.

EPA 1991a. "Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors." Office of Emergency and Remedial Response. OSWER Directive No. 9235.6-03. March 1991.

EPA 1991b. "Risk Assessment Guidance for Superfund: Volume I, Human Health Evaluation Manual (Part B), Development of Risk-Based Preliminary Remediating Goals." Office of Emergency and Remedial Response. OSWER Directive No. 9285.7-01B. December 1991.

Draft Statement of Work for RI/FS, Star Lake Canal Superfund Site

EPA 1991c. "Risk Assessment Guidance for Superfund: Volume I, Human Health Evaluation Manual (Part C), Risk Evaluation of Remedial Alternatives." Office of Emergency and Remedial Response. OSWER Directive No. 9285.7-01C. 1991.

EPA 1992a. "Guidance for Data Useability in Risk Assessment." Office of Emergency and Remedial Response. OSWER Directive No. 9285.7-09A. April 1992 (and Memorandum from Henry L. Longest dated June 2, 1992).

EPA 1992b. "Supplemental Guidance to RAGS: Calculating the Concentration Term." Office of Emergency and Remedial Response. OSWER Directive No. 9285.7-081. May 1992.

EPA 1993. "Data Quality Objectives Process for Superfund." Office of Solid Waste and Emergency Response. EPA/540-R-93-071. September 1993.

EPA 1997. "Ecological Risk Assessment Guidance for Superfund, Process for Designing and Conducting Ecological Risk Assessments." Office of Emergency and Remedial Response. EPA/540-R-97-006. June 5, 1997.

EPA 1998a. "Risk Assessment Guidance for Superfund, Volume 1 - Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments). Interim. Process for Designing and Conducting Ecological Risk Assessments." Office of Solid Waste and Emergency Response. EPA/540-R-97-033. January 1998.

EPA 1998b. "EPA Guidance for Quality Assurance Project Plans." Office of Research and Development. EPA QA/G-5. EPA/600/R-98/018. February 1998.

EPA 2001. "EPA Requirements for Quality Assurance Project Plans." Office of Environmental Information. EPA QA/R-5. EPA/240/B-01/003. March 2001.

APPENDIX C
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
STAR LAKE CANAL SUPERFUND SITE

A preliminary list of probable Applicable or Relevant and Appropriate Requirements (ARARs) will be generated by the Respondent during the Remedial Investigation and Feasibility Study process. This list will be compiled according to established EPA guidance, research of existing regulations, and collection of site-specific information and data. Three types of ARARs will be identified:

- 1) **Chemical-Specific ARARs:** These ARARs are usually health- or risk-based numerical values or methodologies used to determine acceptable concentrations of chemicals that may be found in or discharged to the environment (e.g., maximum contaminant levels that establish safe levels in drinking water).
- 2) **Location-Specific ARARs:** These ARARs restrict actions or contaminant concentrations in certain environmentally sensitive areas. Examples of areas regulated under various Federal laws include floodplains, wetlands, and locations where endangered species or historically significant cultural resources are present.
- 3) **Action-Specific ARARs:** These ARARs are usually technology- or activity-based requirements or limitations on actions or conditions involving specific substances.

Chemical- and location-specific ARARs are identified early in the process, generally during the site investigation, while action-specific ARARs are usually identified during the Feasibility Study in the detailed analysis of alternatives.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

December 23, 2005

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CERTIFIED MAIL RETURN RECEIPT REQUESTED NO.

7001 0360'0003 6676 5411

Mr. Tracy D. Hester
Bracewell & Giuliani, LLP
711 Louisiana Street, Suite 2300
Houston, TX 77002-2770

**Re: Star Lake Canal Superfund Site - RI/FS Administrative Settlement Agreement
Jefferson County, Texas**

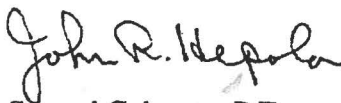
Dear Mr. Hester:

Please find enclosed three (3) copies of the Administrative Settlement Agreement and Order on Consent ("Settlement Agreement") and its attachments for you and your two clients. The AOC is effective December 22, 2005. It addresses the performance of a Remedial Investigation and Feasibility Study ("RI/FS") at the Star Lake Canal Superfund Site ("Site") in Jefferson County, Texas.

As EPA Site Attorney Edwin Quinones mentioned during a telephone conversation with you on November 30, 2005, the designated contact person at EPA has changed. The Settlement Agreement signed by your clients had listed Mr. Rafael Casanova as the Remedial Project Manager and contact person for EPA. However, since that time, a new Remedial Project Manager has been assigned to the Site. Mr. Philip Allen is now the Remedial Project Manager and contact person for EPA. This change is reflected in Paragraph 66 of the Settlement Agreement. As I understand, you have no objection to this change.

For technical matters regarding the Settlement Agreement, Statement of Work and RI/FS in general, please contact Mr. Philip Allen. Mr. Allen may be reached at (214) 665-8516. If you have any legal questions concerning the Settlement Agreement, please contact Mr. Edwin Quinones at (214) 665-8035.

Sincerely yours,


for Samuel Coleman, P.E.
Director
Superfund Division

Enclosures

Internet Address (URL) • <http://www.epa.gov>

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on Recycled Paper (Minimum 25% Postconsumer)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 28 2005

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

MEMORANDUM

SUBJECT: Contaminated Sediment Remediation Guidance for Hazardous Waste Sites

FROM: Thomas P. Dunne, Acting Assistant Administrator
Office of Solid Waste and Emergency Response

A handwritten signature of Thomas P. Dunne is written over the "FROM:" line.

TO: Superfund National Policy Managers, Regions I-X

Purpose

This memorandum transmits the final Contaminated Sediment Remediation Guidance for Hazardous Waste Sites (Sediment Guidance).

Background

The Sediment Guidance is designed to assist EPA staff managing sediment sites by providing a thorough overview of methods that can be used to reduce risks caused by contaminated sediment. The final guidance considers all the comments received during both a public comment period and an external peer review. The guidance encourages project managers to consider a number of factors during cleanup of contaminated sediment, such as:

- Identifying and controlling the sources of sediment contamination and the pathways of contaminant exposure prior to cleanup;
- Using a technical team approach and involving the community and other stakeholders throughout the cleanup process;
- Considering all three major approaches to management of contaminated sediment (monitored natural recovery, in-situ capping, and dredging) and considering alternatives which combine approaches;
- Validating models used to support sediment decisions and considering model uncertainty and sensitivity;

- Considering how contaminated sediment alternatives manage or reduce risks, including consideration of residual risks; and
- Monitoring the effectiveness of remedies at contaminated sediment sites.

Conclusion/Implementation

Efforts are already underway to implement the approaches recommended in this guidance, including training of regional and state staff. The staff point of contact for the Sediment Guidance is Leah Evison, evison.leah@epa.gov, 703-603-9022. The guidance can be found at <http://www.epa.gov/superfund/resources/sediment>.

Attachment

cc: OSRTI Managers
Susan Bromm, OSRE
Scott Sherman, OGC
James Woolford, FFRRO
Matt Hale, OSW
Linda Garczynski, OBCR
Ed Chu, Land Revitalization
Ephraim King, OW
Eric Steinhaus, Superfund Lead Region Coordinator, US EPA Region 8
NARPM Co-Chairs
OSRTI Documents Coordinator